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With Best Wishes for the New Year

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THE ONE-STAGE COMBINED ABDOMINOPERINEAL RESECTION FOR CARCINOMA OF THE RECTUM, RECTOSIGMOID AND SIGMOID*

By CHARLES W. MAYO, M. D.
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Regardless of the condition for which surgical advice is given, it is of value in direct proportion to the benefit to be derived from it by the patient. Such a statement, of course, is axiomatic but deliberation of it reveals that surgical advice for a given condition must have behind it considerate knowledge; and the carrying out of the surgical therapy which has been advised necessitates an even greater intimacy with the pathologic condition to be dealt with in order that the interest of the patient in actuality be served.

My purpose is to discuss carcinoma of the rectum, rectosigmoid and lower portion of the sigmoid. I should like to dwell on a few points, some of which are controversial but which seem to me to be relevant to surgical opinion and treatment in diseases of this nature.

One would be remiss at a time like this not to reiterate certain facts known to you all, but facts which cannot be repeated too often. Cancer of the rectum, rectosigmoid and lower portion of the sigmoid can be diagnosed accurately. At least 70 per cent of the malignant growths of the large bowel will be found within these regions. Too many sufferers from such disorders are still being treated for hemorrhoids without the benefit of even a digital examination. A digital examination of the rectum should be included in any routine physical examination and, in any instance in which a malignant lesion is suspected, a proctoscopic and sigmoidoscopic investigation should be carried out. If, on such examination, a neoplasm is found, surgical treatment will be indicated with rare exception. Röentgenologic examination of the colon rarely is indicated in these cases. Barium in the colon above the growth can be removed but usually only with difficulty and is a hazard rather than an aid to any surgical procedure.

*Read before the meeting of the West Virginia State Medical Association, White Sulphur Springs, West Virginia, July 11, 1939.

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On finding a large mass in the regions under discussion, do not too readily decide that the condition is past the point of surgical removal. Examination of the growth should be made with the patient in various positions, because a growth which may seem fixed in one position may be more movable in another. Many of us have had the experience of finding, on laparotomy, that a growth situated high in the rectum or in the rectosigmoid, which seemed to be too firmly fixed for surgical removal when examined from below, was removable by single-stage or multiple-stage operation when palpated from above. It is a tragedy to condemn these people by well-meaning but faulty and too hasty conclusions of inoperability.

IMPORTANCE OF TIME

Another important factor in the treatment of carcinoma situated at any place in the body is time. We have the layman's viewpoint demonstrated in practically every case; he has very little appreciation of the importance of time in the treatment of such a condition. Who of you have not been asked, "Can't I delay this operation for a few days?" It is not conceived by the layman and occasionally is not thought of by the physician that the few days of grace asked for may easily decide the question of cure or palliation in the case. Time, while by no means the only factor concerned with rapidity of growth or spread, is one of the most important. At some hour of some day and some minute of that hour the change must take place, whether it be by extension to the liver or to some non-resectable gland.

In the case of a locally operable lesion in the rectum, rectosigmoid or sigmoid and the presence of definite but not extensive metastasis to the liver, is resection of the primary growth justifiable? My answer is emphatically "yes," even though in whatever type of operative procedure may be selected one recognizes only palliation. When such conditions have existed, enough patients have lived comfortably and well for years to credit the effort as worthwhile. The longest time that I have known a patient to have lived with a situation of this nature is fourteen years, but many have lived five to eight years. The explanations for this, however, are only theoretic.

When carcinoma exists in any of the regions discussed here and it is resectable, there are a variety of methods or technical procedures from which to choose. Familiarity with all is essential if one is to serve the patient best. Each surgeon in the field of colonic surgery has his own indications as to the choice of operation, depending on the findings in the individual case and his own prides and prejudices. All are agreed, however, that marked advance has been made and the mortality has been favorably affected by careful attention to preoperative preparation.

In the preoperative preparation of a patient who is to undergo an intra-abdominal resection of the colon, there are some rather minor differences but essentially they are the same in principle. There is one controversial point that has been unjustifiably derided in the literature, one which I believe deserves defense, namely, the use of intraperitoneal vaccine as a defense against peritonitis. Its purpose is not to prevent peritonitis; it is not a panacea against death from peritonitis. By far the majority of patients do not need what protection it offers because so little soiling occurs that its help may not be noticed. It is my opinion that its effect is life-saving in only a small percentage of cases—too small, perhaps, ever to be estimated accurately. This much must be said for it: that it mobilizes the large monocytes an average of fourteen and a half times within the peritoneal cavity; that it gives a preoperative index of metastasis or of perforating lesion, as indicated by unusual temperature reactions, and last but not least, that it has been used many thousands of times at The Mayo Clinic without mortality. I would classify it not as an essential but as a useful procedure in the preparation of the patient who is to have a resection of a colonic lesion by the intra-abdominal approach.

I choose to discuss the one-stage combined abdominoperineal operation but in no way to discredit the variety of other methods that exist. One cannot know of colostomy and posterior resection carrying a mortality of four per cent and see patients who underwent that operation years previously still well and working without recognizing in it a worthy surgical method. I have seen performed and have performed local resection and in selected cases believe it justifiable. The combined abdominoperineal operation in one or two stages, however, is a closer approach to the present conception of radical extirpation of carcinoma.

ABDOMINOPERINEAL RESECTION

The selection between the one-stage and two-stage combined abdominoperineal resection is a personal one. I feel that there are definite indications for either. It is my opinion that, when feasible, the one-stage type of procedure is highly preferable and that the mortality, if the cases are properly selected, can be kept below 10 per cent. The danger of good fortune in dealing surgically with these cases is the development of an unjustifiable self-confidence that eventually leads to destruction. The consequent danger of this is ultra-conservatism or failure to use the advantages of that operation in cases in which, by their very nature, most benefit should be derived from it. In other words, there is a fine surgical balance that must at all times be kept in order, so that in each individual instance the ultimate may be given surgically.

In the last few years, I have performed about twenty one-stage operations for each two-stage operation. In the two-stage procedure, I prefer that method described by Lahey. The advantages of the one-stage combined abdominoperineal resection are: (1) only one operative procedure; (2) no elevation in mortality in properly selected cases; (3) shortening of the time element of the carcinoma in the body and the patient in the hospital, and (4) it satisfies all the radical principles of the two-stage procedure and for the therapy of carcinoma. I never know until the abdomen has been opened and exploration has been completed what type of operation best suits the individual case. My method of selection of cases for the one-stage combined abdominoperineal resection can be put into words rather simply. After looking over the situation, if I feel that I can accomplish the operation in an hour to an hour and twenty minutes, knowing myself and my assistants, I select that method of operation. If the situation is such that I estimate it will take a longer time, I select colostomy and later posterior resection or a two-stage combined abdominoperineal procedure, depending on the conditions found.

There are various methods of accomplishing the one-stage type of resection under discussion. Each surgeon has his own modifications, which to him seem indicated and advantageous. I have mine and present them for their worth.

TECHNIQUE OF THE ONE-STAGE COMBINED ABDOMINOPERINEAL RESECTION

The abdomen is opened by a left rectus incision near the median border. The rectus muscle itself is retracted intact laterally, thus giving a minimal effect on its nerves and blood vessels. Entrance into the peritoneal cavity is made through the posterior sheath of the left rectus muscle.

Thorough exploration of the abdominal cavity is next made, with particular attention to the liver, the colon and the glands along the aorta and at the bifurcation of the aorta, especially about the upper portion of the superior hemorrhoidal artery. Incidentally, the gall-bladder is palpated and it has been interesting to note that approximately 20 per cent reveal disease, usually stones. The growth itself, when not too low in the rectum is next palpated to determine its local extent, perforation, fixation and other points which are helpful in determining the difficulties to be expected.

When the state of affairs has been determined and a one-stage combined abdominoperineal resection is feasible, the patient is placed in deep Trendelenburg position, one which adds much to the technical ease of the

operation. The intestines are packed off from the pelvis. In the woman, the uterus may be fixed to the abdominal drape by loose sutures through the round ligaments to aid in pelvic exposure. Another point that aids is preoperatively to place an indwelling catheter in the bladder, which, if neglected, may well handicap the situation.

The chosen loop of sigmoid is retracted by a soft rubber tube which has been passed through the mesosigmoid near the wall of the bowel. This allows free manipulation of the sigmoid without too many hands in the field. With the bowel now held fairly taut and in position, the dissection is started and extended down toward the pelvis about one and one-half inches from the colon itself on either side. The peritoneum generally will strip laterally without much difficulty; the circular incision can be made with scissors around the peritoneum in the deep portion of the pelvis — the pouch of Douglas in the female and the rectovesical space in the male. Depending on the situation and condition of the growth, this part of the procedure may be comparatively simple or difficult. In some instances it may even be found necessary to accompany an already radical operation with a hysterectomy.

LOCATION OF URETERS

As one strips the peritoneum from the mesosigmoid, attention must be paid to the location of the ureters in order that no injury occur to them. The left ureter in natural position lies closer to the mesentery; the right normally courses more laterally over the large vessels.

At this point, to promote greater mobility and easier pelvic approach, the smaller vessels in the mesosigmoid are tied and divided down to the superior hemorrhoidal vessels. The rectus muscle is then split by curved forceps and the rectus sheath anterior and posterior to the split is cut transversely and sufficiently loosely to admit the proximal portion of the sigmoid as a single-barrel colonic stoma. A long Payr clamp is passed through this aperture and the desired portion of sigmoid is crushed in the clamp. Another smaller Payr clamp is placed just distal to the first one, and the sigmoid between is cut by cautery. The portion of bowel to serve as a colonic stoma is brought to the anterior abdominal wall between the split portion of the rectus muscle, this muscle later to serve as a partial sphincteric control in the upright position.

INVERTED SUTURE

Following this, the distal stump of the sigmoid is closed by an inverting suture, the dissection of the distal segment being completed anteriorly to separate the rectosigmoid and rectum from the seminal vesicles and prostate or the posterior vaginal wall, as the case may be. The superior hemorrhoidal vessels are then ligated high, and manual and scissor separation about the rectum is continued.

The dissection of the lower portion of the colon and rectum having been completed, that portion of the bowel is placed in the extraperitoneal pelvic region and the adequate peritoneal folds are brought together by suture to form a new pelvic floor. In the female, the uterus may be used for additional support.

The lateral peritoneum between the single-barrel colonic stoma and the abdominal wall is now closed to prevent herniation of the bowel and to guard against such possible strangulation. After closure of the anterior abdominal incision, another procedure which has proved to be a definite help is attended to. A purse-string suture of heavy braided silk fishline is placed close to the Payr clamp and the clamp is then removed. Into the sigmoid, inserted not quite to the skin margin, is placed a rectal tube. This tube is tied to the bowel to prevent leakage and slipping; later it passes to the side of the bed to allow the passage of gas and drainage without contamination of the wound.

Those procedures concerned with the abdominal part of the operation being completed and proper dressings having been applied, the patient is not turned in Kraske position but, rather, is placed in lithotomy position. This saves considerable maneuvering

and I believe is a preferable posture for the patient and is one which in no way interferes with an adequate technical posterior resection.

The anus is "purse-stringed" shut and, after draping, a triangular incision is made about it, its base being anterior. The coccyx seldom needs to be excised. The dissection, including the fat in the ischiorectal fossa, is carried laterally through the levator ani muscles before the anal canal is separated from the vagina or the prostate, depending on the case. The perineal part of the operation, if the first, or abdominal, part has been completed properly, rarely requires more than ten to fifteen minutes. When the posterior dissection has been completed, the growth with the bowel removed, and the small vessels have been ligated, it has been my practice to pack the posterior wound with gauze in a rubber dam. This has two main advantages: it supports the pelvic floor in case of postoperative vomiting and it controls oozing of blood. This pack is left in for about four days and, having rubber next to tissues, it may be removed easily without requiring opiates. One warning regarding removal of the posterior pack is worth mentioning. Care must be taken not to remove it as one would a cork because of the suction which it can create on the new pelvic floor.

I never use primary closure of the posterior wound, because it seems more reasonable to have the cavity heal from the bottom out, and the principle has worked to the better ultimate advantage of the patient. One stitch is placed in the edges of the wound simply to keep the pack in place.

POSTOPERATIVE TREATMENT

It has appealed to me that measures to prevent complications are preferable to the care of a complication. For this reason, regardless of how well a patient may seem to be immediately after operation, my routine orders include elevation of the foot of the bed, a transfusion of at least 500 c.c. of blood and the administration of a high concentration of oxygen, either by tent or by mask. I am confident that these orders have been very beneficial in all cases, despite the fact that they may not have been necessities in all cases.

Most patients are out of bed on the ninth to the twelfth postoperative day. Irrigations are given to the posterior wound after the pack has been removed; depending on the type of drainage, the solution may vary. A very promising solution which we have been using recently is made up by bringing a physiologic solution of sodium chloride to a boil, and at the boiling point adding enough sulfanilamide to make a saturated solution. It will take up only a small amount (0.8 per cent) of sulfanilamide.

It usually takes from six to eight weeks for a posterior wound to heal. In cases in which one-stage or two-stage combined abdominoperineal resection is performed, mucous or fecal fistulas in the posterior region are avoided.

PROGNOSIS

It has been said that statistics can be used to prove anything, even the truth. One must be very careful in evaluating statistics, particularly one's own. Are they derived from too carefully selected groups? Are the five and ten-year "cures" estimated by including the hospital mortality or are they based on the number of patients who have survived operation and have the chance of living five years or more? There are many points which should be known for proper evaluation of medical statistics, facts which too often, through lack of elucidation, lead to misconception.

There are two pathologic methods of estimating prognosis with which those who deal with malignant lesions of the colon should be familiar; namely, Broders' method of grading the malignancy of a neoplasm into four groups by the amount of dedifferentiation, and Duke's classification of A, B and C, depending on mural penetration and glandular involvement. Each method is excellent but the combination of the two has definite advantages as it explains the poor prognostic result which may ensue in the case of a low-grade lesion with a high degree of mural penetration and glandular involvement. It

predicts equally well the excellent result to be expected in the case of a high-grade lesion with a low degree of mural penetration.

In conclusion, combined abdominoperineal resection is a rational method of treating the well-selected case of carcinoma of the rectum, rectosigmoid and lower portion of the sigmoid. Only by wise selection of cases fitted for the operation can the mortality be kept within reason. The mortality rate may be reasonably said to be within justifiable limits when it is between eight and twelve per cent. If the patient survives the surgical procedure, the chance of five and ten-year survival without the annoyance of a posterior fistula is greater than in other less radical types of surgical therapy.

DISCUSSION

Dr. H. H. Haynes, Clarksburg: A patient consulted me, stating that a year previous she had been told she had an incurable carcinoma and that she would not have an abdominal colostomy. I did an abdominoperineal resection and continued the path that Dr. Mayo did, down to the rectum, first placing the patient in the lithotomy position and putting two men to work on the perineum while I worked on the abdomen with an assistant. We tunneled through until we met and carried the whole carcinomatous mass down until it protruded from the perineum; made an incision just above the carcinoma, passed a rubber tube that had been built up and was heavy rubber with a smaller rubber tube through it, put a cord on, did not purse-string it, but just prepared a groove in the rubber tube ahead of time, ligated that to strangulate the bowel, then passed the rubber dam through underneath to keep from soiling the perineum, and finished the operation, closing the perineum and putting one through-and-through stitch in the perineum. It was six days before it began to leak; the patient had six days of sterile repair. Recovery was so satisfactory that I kept up more or less a modification of that line of work and invariably do the one-stage abdominoperineal operation. There has been only one exception made from that, and that was in a case that had been operated on for obstruction and there was a discharging fistula coming up from the pelvis. In a case of that kind I felt it would be absurd to try to do such an operation.

What little experience I have had, twenty some cases, would certainly indicate that the one-stage operation has many advantages and few disadvantages.

One of the most interesting things about reviewing the literature on carcinoma of the rectum is the wide variation of opinion of very good authors as to the lymphatic spread. The English and German schools grade very differently and we cannot possibly question the ability of either one. Miles teaches that there are three spreads, the upward spread, the lateral spread, and the downward spread, the lymphatic, intramural, and so on. The concensus of German opinion is that if the carcinoma is well above the point of attachment of the levator ani to the rectum, the spread is upward and lateral and the downward spread practically never takes place unless the attachment is below or near, practically at, the levator ani muscle. I want Dr. Mayo to analyze that for us.

In many cases it is possible to do a satisfactory pelvic anastomosis. I have had five cases, four of which were very satisfactory. One was done quite near the sphincter by bringing the bowel down to the perineum and doing an anastomosis on the perineum. This case became infected and it was followed by a stricture. It was necessary later to divide the sphincter to get rid of the fistula and the stricture. After that it was very satisfactory.

As pointed out by Dr. Mayo, we cannot possibly overemphasize the importance of proper diagnosis and proper examination in troubles of the rectum. In any case that has a change in the habits of the bowel, either from constipation to diarrhea or from diarrhea to constipation, any change in the sensation of the bowel, enough for the patient to mention and complain about—and those sensations are quite variable, in my experience—there should be a digital examination and an inspection of the anus and if satisfactory cause is not found proctoscopic examination should invariably be done.

There is no question but that the procedure of operation for carcinoma of the rectum is changing and changing rapidly. If they are properly diagnosed, diagnosed early, sent in before metastasis takes place, I know of no operation that will give more satisfactory results, and personally I feel that the great advance that must be made in this must be made by the men who see them first.

Chairman R. J. Reed, Wheeling: I think it behooves the medical profession to retract a little

on the trouble they have caused in times past on the matter of the colostomy. The reason the average layman damns the colostomy is because the average doctor has said to his patients, "Now you don't want to have to have a colostomy, you don't want to have to go through life with this thing."

The second thing that has damned the colostomy is the use of the colostomy bag. I want to condemn it as having no place in anybody's armamentarium. With the proper training of the patient, with the wearing of a belt similar to the one that was shown by Dr. Mayo, we can have very satisfactory results.

I would like Dr. Mayo to tell us in a few words what their preoperative medical preparation consists of, aside from the vaccine, and how long he takes for that.

Dr. Charles W. Mayo, closing the discussion: As far as the question of sacral colostomy versus abdominal colostomy is concerned, that is a matter of personal opinion. So far as the patient is concerned, one finds the patient is able to adjust himself or herself to a colostomy practically any place. One hesitates to place a colostomy either sacrally, perineally, or on the abdomen of the patient who is not clean. A clean person will take care of the colostomy very satisfactorily, and I feel for my own part that it is easier for a clean person to take care of a colostomy on the abdomen.

As to the question of spread of carcinoma of the rectum, if the carcinoma of the rectum is low the spread is both up and down. If the carcinoma of the rectum is high, the spread is up. The advantage of the one-stage combined abdominoperineal is getting the glands as high as possible. Many people have done work on the question, including Dr. Vernon David of Chicago. If I remember correctly, his estimate of glandular involvement was pretty close to 70 per cent, much higher than one usually thinks. It is very important in removing a specimen that as many glands as possible be examined from the standpoint of metastasis.

I was glad to hear Dr. Reed mention the matter of colostomy. It is a real fear and it is a psychological problem which can be dealt with by any intelligent medical or surgical man.

We changed to the left rectus incision with retraction of the left rectus muscle a few years ago and I can say again that the incision is a much cleaner one, the healing is much more primary than where the rectus muscle is gone through in the incision.

Preoperative preparation includes irrigation, putting the patient on a non-residue diet, which consists mostly of fruit juices and stick candy, and in addition to that we have the patient there four or five days, probably, and there are very, very few who cannot be cleaned out for primary resection such as we have described.

Colon and Rectal Polyps

Cancer of the colon and rectum would become less common if x-ray and visual examinations were extensively used to discover polyps (tumor-like growths) of these areas, Neil W. Swinton, M.D., and Shields Warren, M.D., Boston, declare in *The Journal of the American Medical Association* for November 25.

Polyps are abnormal tumor-like protrusions projecting from the mucous membrane. The authors believe that polyps of the colon or rectum are true tumors which are premalignant lesions due to an inherent defect in cell growth, and that chronic ulcerative colitis (ulcerating inflammation of the colon) is not a predisposing factor.

"If all physicians called on to treat disorders of the colon or rectum will submit their patients to visual and x-ray studies an increasing number of polyps will be found," the authors contend, "the incidence of cancer of the colon and rectum will be reduced and patients with malignant lesions will be submitted to operation earlier than has been the case in the past.

"Polypoid disease may be found at any age. We believe that the incidence of polyps of the rectum and colon is much greater than has been recognized.

"In the last eight years we have operated on 827 patients with malignant tumors of the colon and rectum. In 120 cases, or 14 per cent of this entire series, the malignant lesions were demonstrated to have arisen in benign mucosal polyps. In the remaining cases of cancer of the colon and rectum the invading tumor was so extensive that the original architecture of the tumor could not be identified, but we believe that a much larger percentage of cancer of the colon and rectum arises from preexisting benign polyps. This is sufficient evidence to consider all polyps of the colon and rectum as premalignant lesions. All polypoid structures in the colon and rectum must be removed or destroyed if we are to detect early malignant change."

THE TREATMENT OF SINUSITIS IN CHILDREN*

By EDWARD CLAY MITCHELL, M. D.
Memphis, Tennessee

My interest in sinusitis was aroused in 1919, because of the large number of patients who came to me for treatment of various affections which presented no symptoms of a disturbance in the upper respiratory tract, yet were found to originate in infected sinuses. Last year, at the meeting of the American Medical Association, I reviewed my experiences with sinusitis during the previous twenty years. Many of the patients included in the study were private patients treated in collaboration with Dr. John J. Shea. The text of that article appeared in the January 21, 1939, issue of the *Journal of the American Medical Association.* The present discussion, which will contain much of the same thought, will deal with sinus disease not only from the viewpoint of the pediatrician, but, in particular, from the viewpoint of the general practitioner.

The proper treatment of sinusitis is dependent upon a familiarity with all those factors, anatomic, physiologic, etiologic and pathologic, which have a bearing upon the development and course of the disease.

The sinuses develop by pneumatization. When the ostium is blocked, development ceases. During childhood and adolescence, there is always a possibility that the sinuses will resume their growth when pneumatization is re-established. I have followed a number of patients who at eight to ten years of age presented evidence of juvenile sinuses, with constantly recurring sinusitis. When these patients had reached fifteen or sixteen years of age and ventilation had been re-established and growth had become normal, they no longer had any trouble. I have also had patients who refused drainage; at maturity their sinuses remained undeveloped and not infrequently retained their infantile appearance. These individuals continued to suffer from sinusitis. Further, I have often observed in the same patient poorly developed and diseased sinuses on one side, while the opposite side was normal in size and unaffected. These facts offer convincing proof that the undeveloped sinus is usually diseased, that the well developed sinus seldom, if ever, is chronically infected, and that cure is rarely complete until the sinus has assumed a size and proportion commensurate with the age of the patient, other factors being equal.

The antra and sphenoid sinuses are present at birth; the latter, however, is in the presphenoid bone and comes down into the sphenoid bone at the age of approximately four years. The antra continue to grow, reaching the level of the floor of the nose at the age of puberty. They play no inconspicuous rôle in dental development; shadows of the teeth may often be seen encroaching upon the shadows of the antra. As a rule, the frontal sinuses begin as a bud or cell nest projecting into the frontal bone from the posterior ethmoids. The ethmoid sinuses are also present at birth, though they are only rudimentary. When the ethmoids become diseased, growth usually ceases in the frontals as well; the frontal sinuses, therefore, are, to a large extent, indicative of sinus growth in general.

In the majority of cases, sinus disease is induced by infection and allergy, separately or together. A number of other factors, however, may, in a measure, be instrumental.

THE AUTHOR

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*From the Department of Pediatrics, University of Tennessee, College of Medicine.

Heredity plays a definite rôle in the structure of the sinuses; the child tends to acquire sinuses similar to those of the ancestor whom it resembles in facial appearance. Sinuses which are inherently deficient, therefore, are more likely to become diseased than those of normal structure.

Internal secretions are also believed to affect sinus growth. Mortimer and his associates controlled the development of the sinuses of white rats through the pituitary gland.

INFLUENCE OF ENVIRONMENT

Factors such as food, vitamins, environment, and life habits likewise influence the sinuses. The influence of environmental conditions is manifested by the fact that individuals who have steam heated homes are more susceptible to infection than those whose homes are heated with open fireplaces. Steam heat keeps the mucous membranes congested, providing a fertile soil for bacterial growth. The higher incidence of sinus disease within recent years is doubtless attributable to the increasing number of persons who live in a steam heated atmosphere.

I have further observed that sinus disease is less common among individuals who seek treatment in dispensaries than among those who are treated in private practice. The former appear to acquire a degree of immunity from repeated contact with diseases of the respiratory tract.

Locality contributes to some extent to the incidence of sinus infection. The incidence is high in the Mississippi Valley and in most of the northern and eastern states. In Arizona and along the southern coast of California the infection is seldom encountered. Only a few cases are seen in the greater part of the southern coast region. I was surprised recently, however, to hear Dr. Quillian, of Florida, state that sinusitis is not uncommon among residents in and around Miami.

Sinus disease is probably most prevalent in the fall months immediately after the opening of school, because of the increased number of contagious diseases at that time, and in January, February and March, when the sun's rays are weakest and the child's resistance is lowered.

The influence of tonsillectomy and adenoidectomy on sinus disease has been a subject of wide discussion. It has long been recognized that the tonsils have a definite function, and that this function varies with the life cycle. In the extremely young child, the pharyngeal tonsil, or adenoid, reacts most often to infection. The adenoid drains into the glands of Henle and into the postcervical glands, thence into the chest glands. Consequently, in infants and in children under the age of two years, upper respiratory infection usually involves the antra and ethmoids, and, in addition, the middle ear and the postcervical glands. At approximately two years the faucial tonsils, which drain into the anterior cervical glands and the thoracic duct, begin to hypertrophy and continue to do so until the eighth or ninth year, or even until puberty. It is now generally accepted that the tonsils act as a barrier against infection; that they hypertrophy during this period because they are most necessary at this particular time. Thereafter, they gradually diminish in size.

IMMUNIZATION

Despite an abundant literature dealing with the action of the cilia and their regeneration in the sinuses, and extensive studies of innervation and of vasomotor reactions, a wide variance of opinion persists as to whether the sinuses are capable of providing immunization. At the meeting of the Southern Medical Association in 1924, I reported an analysis of 145 cases wherein treatment had been given for a variety of disorders induced by sinus disease, as shown in Table I. That report also contained a tabulation (Table II) of the number of patients whose tonsils and adenoids had previously been removed, including the time of their removal.

It is my contention, based upon clinical experience, that when this barrier, the tonsil, is removed early in life, additional work is thrown upon the sinuses, and that the sinuses

TABLE I

Conditions Resulting from Sinus Disease

	Cases
Return of adenoid symptoms	62
Chorea	10
Malnutrition or failure to gain weight	28
Carditis	13
Recurrent bronchitis	23
Irregular fever of unknown origin	11
Anemia	5
Arthritis deformans	1
Pyelitis	45
Asthma	18
Cyclic vomiting	2
Nephritis	15
Headache	3

TABLE II

Time of Removal of Tonsils and Adenoids

Age	Cases
Under 6 months	3
6 months to 1 year	3
1 to 2 years	14
2 to 3 years	30
3 to 4 years	17
4 to 5 years	20
5 to 6 years	10
6 to 7 years	4
7 to 8 years	1
8 to 9 years	2
9 to 10 years	2
Total	106

play an intimate part in immunization against diseases which may arise from infections of the upper respiratory tract. In this connection, Kaiser stated that, on examination of a large number of school children with and without tonsils, he found sinus infection more prevalent in those whose tonsils had been removed during their early years.

Sinus disease is observed in three stages: acute, subacute and chronic. The treatment, therefore, must be administered according to the manifestations and etiologic factors in the individual case. This calls for a careful history and a complete rhinologic survey, as well as an examination of the throat, mouth and teeth, and röentgenologic and laboratory studies. Röentgenograms are particularly valuable as a diagnostic measure in children. I have found it useful to keep films demonstrating the normal growth of the sinuses at different ages as a standard for comparison; these, however, like weight standards, can be only approximately accurate. In some cases of sinusitis, extension of the infectious process is apparent in the chest; in fact, this finding may be so pronounced as to lead one to suspect tuberculosis. Transillumination is of less value in the child than in the adult, because of the thinness of the walls of the sinuses during childhood.

In addition to general physical studies, every patient with sinusitis should have an allergic study. This should include an inquiry as to the presence of allergy in the patient's family and a history of his contacts with others. The symptoms should then be considered in relation to any contacts which he may have had with offending allergens. Cutaneous tests are of limited value.

A differential diagnosis between infectious and allergic sinusitis may be made by an inspection of the nasal mucosa. In the allergic type, the mucous membrane is pale and the secretion thin; in addition, other symptoms of allergy are usually present. In chronic sinusitis from infection, the mucous membrane of the posterior nares, particularly in the region of Waldeyer's ring, is boggy and red and secretes a thick mucus. Further, there is generally a fluid level, especially if the antra are the foci of infection. Frequently, both infection and allergy play a part.

ACUTE AND SUBACUTE SINUSITIS

The chief symptoms of acute sinusitis are fever, which may vary from a low degree to one quite high at times, inflammation of the mucous membrane of the nose and throat and discharge from the posterior nares, vomiting, restlessness, and, in some cases, headache. The treatment during this stage should consist of rest in bed, the administration of mild cathartics when necessary, salicylates for pain, alkalis, particularly in the form of orange juice, and an abundance of water. Rhinorrhea may be controlled by means of codeine, belladonna, and drugs of similar type. I do not recommend local treatment in the acute stage. If the infection is extremely acute and the prevailing organism appears to be streptococcus hemolyticus, sulfanilamide is usually beneficial. This should be prescribed according to the child's weight, i. e., a daily dose of .2 grams or three grains per kilogram of body weight. I have found that sulfanilamide

sometimes dries up the secretions rather rapidly, and for this reason have not used the drug routinely in mild or moderately severe infections.

In the subacute stage, after the discharge has become more purulent and the fever lower, nasal packs consisting of small pledgets soaked with salt solution are recommended. Infrared radiation may also be helpful. The infrared lamp is used for ten minutes three times a day, being placed at a distance of thirty inches. In some cases, the discharge may be removed by suction under direct inspection. I continue to give alkalis and feed the child a substantial but fairly low carbohydrate diet during this stage. As improvement takes place, the carbohydrate intake is increased. Continued bed rest is desirable.

After the acute attack, the patient should be protected from all danger of cross infection, as resistance is low and recurrence likely. A change of climate is beneficial, especially during the winter months. In the summer the child should receive heliotherapy by direct exposure to the sun's rays, after the method of Rollier. Swimming and diving predispose to a recurrence of the infection. Several physicians of Miami have asked me to advise patients whom I send to Florida following sinus infection to avoid going in the ocean, as salt water particularly tends to promote relapses.

CHRONIC SINUSITIS

The chief purpose of this discussion is to point out to the general practitioner the fact that chronic sinusitis may be responsible for a number of disorders which apparently are not referable to the upper respiratory tract, that it is often overlooked or neglected, and that the sinuses should always be investigated during the search for a causative agent in infectious diseases of any type. The variety of conditions which may be brought about by sinus disease is well illustrated in Table I, as well as by the following table, which presents the chief complaints of 100 private patients with sinus disease treated during the past few years.

TABLE III

Chief Complaints of Private Patients

	Cases
Recurrent colds	19
Otitis media	5
Return of adenoid symptoms	12
Parenteral diarrhea (mild)	5
Dysentery	7
Bronchial asthma	8
Secondary anemia	6
Chorea and rheumatic fever	3
Pyelitis	6
Nephrosis	3
Headache	24
Enlarged cervical glands	2

It is interesting to note that in the above group, none of the children under seven years of age suffered from headache. This symptom was much more common in those approaching the age of puberty. It was also observed that a majority of those so affected were allergic.

In order to understand chronic sinus infection, one must remember that there is a relative rate of growth for every normal sinus; that this growth increases by pneumatization or ventilation, as the soap bubble increases in size as air is forced into it; that when the opening of the sinuses is closed and ventilation inhibited, the sinuses cease to grow and become infected.

INFECTIOUS TYPE

In chronic sinusitis without evidence of allergy, the treatment should be based upon a study of the clinical picture along the following lines:

1. Are there severe local symptoms referable to the upper part of the respiratory tract, as coughing, sneezing, nasal secretion, and headache?

2. Is there some focal infection which can be definitely attributed to the sinuses?

3. Are the sinuses developed normally according to the child's age? Are they developed equally on both sides in the röentgenogram and on transillumination?

4. Is there evidence of a purulent discharge?

Palliative local treatment consists of the application of nasal packs, suction, and displacement. Irrigation of the nose with solution of sodium chloride has been found use-

ful for many nasal disorders, particularly those wherein the membrane is atrophied.

Medication with tincture of iodine and, in the presence of a thick discharge which induces coughing, with potassium iodide, has been effective in my experience. Tonics, vitamins, especially vitamin C, and a properly supervised diet are essential. Lymphoid hyperplasia may be reduced by the administration of five grains of calcium lactate, one-fourth grain (0.016 gm.) of thyroid extract, and one-twentieth grain (0.003 gm.) of parathyroid extract in milk three times daily for five consecutive days twice each month.

A change of climate is most beneficial. The more chronic the infection, the longer should the patient remain in the new environment. I have found that patients who are entirely relieved in a new climate often have a recurrence of symptoms on returning to their former location.

HEAT TREATMENT

Nickum has successfully treated chronic sinusitis by the induction of heat to the limit of tolerance with short wave diathermy. This serves to increase phagocytic action and stimulate lymphatic drainage.

For those patients who require immediate drainage for relief of secondary symptoms elsewhere in the body, and for those in whom palliative treatment has failed, antrotomy and drainage for at least three or four days is deemed advisable. For the sake of completeness, the technique of this procedure as followed by Dr. John J. Shea is given in detail.

* * * *

If the child's condition warrants, ether is the most desirable anesthetic, since by its use the operation may be carried out deliberately and thoroughly. In the presence of renal infection, either nitrous oxide or an ethylene mixture is safer than ether, although the operation must be performed rapidly. The use of avertin with amylene hydrate supplemented by the local application of four per cent solution of cocaine minimizes the risk of postoperative pneumonia.

The nares are cleansed by suction, and the site of operation is painted with a 30 per cent solution of alcohol. The ostium of the antrum is sought and dilated; if the ostium is not found, the membranous tissue of the middle meatus is perforated. If the operation is to be a success, the patency of the ostium must be maintained. The material is withdrawn with a syringe. If the patient is suspected of being allergic, sterile physiologic solution of sodium is instilled and removed; otherwise, brain broth medium is used.

TECHNIQUE

In young children the naso-antral window is made with an antral trocar, whereas in older children a curved gouge is employed. The aperture is shaped to fit the rubber tube by a series of dilations with Ritter sounds. The catheter is next inserted, one of the smaller Ritter sounds being used as an obturator; one can easily tell when the catheter slips through the window. Suction is then applied to the drain by means of a medicine dropper, through which the contents of the antrum are visualized. The presence of air bubbles in the antral contents should be noted, as these bubbles indicate the patency of the secondary opening. If no bubbles are visible, saline solution is forced through the tube until it appears in the back of the nose or the nasopharynx, thus forcing out any mucous obstruction to the ostium. Suction is again attempted and, if bubbles are still not visible through the glass, the tube is removed and the operation repeated, special attention being given to the ostium.

* * * *

For many years vaccines have been employed to increase resistance to infections of the upper respiratory tract; their therapeutic effect, however, leaves much to be desired. It has been found that the majority of mixed vaccines confer only slight protection against infections of this region. From the studies of Dochez and his co-workers, it appears that the primary infectious agents are filtrable viruses, but that ordinary pathogenic bacteria become activated and play a secondary but

important part. In my experience, vaccines do not prevent colds, but do reduce their severity.

It is my custom to use autogenous vaccine during the winter following the antrostomy. Culture material is obtained from the sinuses by suction and usually is mixed with a seasonal vaccine made from a culture of those organisms which seem to be prevalent during the season. The vaccine is given at the first appearance of cold weather and is repeated at varying intervals during the winter season, depending upon the severity of the infection. Five small doses are administered in each treatment, one dose being given every four days.

ALLERGIC TYPE

Allergy is so prevalent and so frequently a cause of sinusitis that the practitioner should have at least a working knowledge of the subject. Unfortunately, the rôle of allergy is often overlooked.

Allergic sinusitis may be induced by one or more of three varieties of allergens: (1) food, (2) pollens, and (3) inhalants other than pollens. Removal of only one type is seldom sufficient; usually, contact with every irritant must be avoided before relief can be obtained. All foods to which the patient is allergic should be eliminated from the diet, at least for a time. Often, articles in the home, such as overstuffed chairs, may contain materials which incite an allergic reaction. Many individuals are sensitive to dust.

Immunization to pollens may be brought about either by a change of environment to a locality in which the offending pollens do not exist, or by the use of extracts. A change of environment frequently enables patients to develop resistance to allergens, permitting a return to their habitual localities without suffering a return of symptoms.

We have found that when allergic sinusitis is accompanied by infection, this must be remedied before the allergy can be corrected, and conversely, that an infection cannot be materially benefited so long as a co-existing allergic condition is neglected.

CONCLUSIONS

1. Development and growth of the sinuses is dependent upon the establishment of proper pneumatization.
2. An individual with normally developed sinuses may have attacks of acute sinusitis; chronic sinusitis, however, is associated with deficient development.
3. In our experience, as well as in that of Kaiser, removal of the tonsils and adenoids early in life predisposes to sinusitis.
4. Systemic diseases presenting no symptoms referable to the upper respiratory tract may often be found to arise from infection of the sinuses.
5. Chronic sinusitis may be of infectious or allergic origin, or both. Failure to effect a cure may be the result of failure to recognize the true nature of the disturbance.
6. Sinus infection may be completely cured only if discovered early and properly treated.

DISCUSSION

Dr. Jack Basman, Charleston: The only way we can find out anything at all about sinusitis is to follow our patients, and the rhinologist and the pediatrician should be closely cooperative. We should at this stage consider the röentgenologist. X-ray therapy is not a panacea for sinusitis, but there are some sinus conditions in a small child with a chronic cough, watery discharge and cloudy ethmoids, with a good deal of lymphoid hyperplasia, that react fairly well to x-ray therapy.

The rhinologists themselves do not agree on the diagnosis and treatment of sinusitis, neither do the pediatricians, and x-ray diagnosis of sinusitis is a very questionable matter. A number of röentgenologists shown the same sinus plates very rarely agree as to the diagnosis.

I think nose drops are a very important factor. In acute sinusitis, we know that we must try to promote drainage. One frequently, in doing house-to-house pediatrics, sees the child whose nose is beefy red with a chemical trauma due no doubt to irritating nose drops. A good deal of work on this was done by Proetz, of St. Louis, who showed that with a watery solution there is edema of the mucous membrane of the nose, and with a solution that is too strong one gets a chemical trauma. His solution is one per cent ephedrine in physiological saline. It is not irritating and does not injure the cilia.

A frequent cause of sinusitis is otitis media. Whether it is a cause or a sequel I cannot say, but children with sinusitis should be tested for hearing at a later date.

The literature is voluminous concerning the vitamin treatment of sinusitis, and much experimental work has been done to prove that vitamins are of benefit, more so before the sinus infection than after.

There are a number of reasons why sinusitis is so prevalent in children, and the first one, I think, is that children are more susceptible to the exanthematous diseases. Their sinuses are a bit enlarged in comparison to their size, and children will rarely blow their noses. Glidden has proven conclusively that one of the reasons we get so much sinus infection is due to nasal stasis. Some men feel that it is wrong to use nose drops in the acute stage, but aside from that I think the treatment for acute sinusitis is fairly well agreed upon. The treatment for subacute and chronic sinusitis is not. It has been my idea that in any child who has a nasal infection or a cold over a period of time which we feel should have subsided, we must always consider a sinus infection.

We are all acquainted with the results of sinus infection; we are all familiar with the bronchiectasis. X-ray men can diagnose and have diagnosed sinus disease by looking at the x-ray film. The sinus lung is quite typical. The posterior nasal lymphoid hyperplasia sometimes responds to x-ray therapy, as does the lymphoid tissue around the base of the eustachian tube.

Bed rest and the things that Dr. Mitchell mentioned in acute sinusitis are very, very important.

As to allergic sinusitis, I think we must do more than just look at the mucous membrane to differentiate between infectious and allergic sinusitis. Cytology of the nasal secretions is very important. If eosinophils are found, all well and good, one can feel fairly certain that it is an allergic manifestation; if they are not found it does not rule out allergy. Hensel also has shown us that the pH of the mucous membrane of the nose changes in allergic conditions. It is more alkaline than it is acid, which is found in the acute sinus infection.

I should like Dr. Mitchell to say something about the x-ray treatment of lymphoid hyperplasia. I am much interested in it because these children whom the pediatrician sees are a very perplexing group; they have chronic colds and coughs and they go from one cold to another. My experience has been meager, but I have not seen very many cases of allergic rhinitis without a secondary bacterial infection.

Dr. J. B. Clinton, Fairmont: May I ask Dr. Mitchell what age he considers the best at which to remove tonsils and adenoids.

Dr. H. V. Thomas, Clarksburg: I was impressed with Dr. Mitchell's statement about no treatment in acute sinusitis. That seemed a rather radical departure. It has always been my feeling that one factor was essential, and that was drainage, particularly if the individual is running a rather high temperature and showing the effect of toxic absorption and if it can be demonstrated that the nose is blocked, and blocked so that ventilation and drainage are not taking place.

I was also impressed with the statement from the standpoint of x-ray. While x-ray is only an aid in the diagnosis of sinusitis, I believe it is one important factor, and it is useful in comparison later, both from the standpoint of development as well as disease, because certainly we see a small percentage of adult cases that should have gone ahead under normal conditions and developed normal sinuses but which are infantile in character. It brings up the very important question of expense. We believe that the x-ray of the sinuses is just as necessary in completing the picture of sinus disease as the electrocardiogram is in heart disease. It is an aid; it is not complete in itself. Anybody who makes a diagnosis and recommends treatment on the basis of an x-ray alone is entirely at fault.

The essayist called attention to transillumination of the sinuses. While we do not believe it is as valuable in the infant or in the earlier ages as in the adult, we still believe it has a distinct value and we transilluminate repeatedly because it does give a small working basis as to what is going on, particularly in cases of congestion.

I was glad to hear Dr. Mitchell mention gentle suction which is used in children. Too often we see too much suction applied to the nose, resulting in actual harm rather than good.

I should like to have Dr. Mitchell give us a little more information from his experience in regard to cultures. We believe it is entirely wrong to rely

upon one culture and to take for granted that reinfection or repeated infection is always due to the same and original factor. It is certainly our experience that the bacterial flora of the antra may change.

I should also like Dr. Mitchell to give us a few more works on heredity.

We believe that infection of the antra can be a very definite focus of infection to other parts of the body. In my particular field of ophthalmology we have demonstrated that in acute hyalitis, with simple drainage of the antra the hyalitis clears up. We cannot but believe that it very definitely forms a point of focal infection.

Dr. George M. Lyon, Huntington: It is a known fact that after a child passes the age of eight he is much less inclined to have absenteeism from school or to be sick or to have frequent common colds which bother him so tremendously up until he is eight years of age. I often see children of pediatricians who are all hot and bothered because until the child is four or five years old it has a lot of head colds. We may call those sinusitis, mucous membrane infections, or what-not. Regardless of what is done they tend to disappear without leaving any marked evidences of damage to the child.

Fortunately there is a swinging back, as shown by Dr. Mitchell's paper, in the direction of conservatism and rationality, and we are giving the immunologic panel of the human constitution a chance to grow up, just as we do the physiologic or the anatomic. Certainly in the past we have all been guilty of doing too much to the child's nose just because we got excited about the presence of infection.

Not very long ago I heard Helmholz of the Mayo Clinic state that he did not believe that he could trace any pyuria or pyelitis or nephritis to any focus of infection related to the tonsils. Somebody asked him, "What about the sinuses?" He said, "Yes, there are evidences of that, too."

I believe we must not have hanging over our heads a sword which makes us feel that foci of infection in children under seven or eight are anywhere near as important as in adults in whom the degenerative diseases have begun to so weaken the tissues of the body that foci of infection can express themselves in the manner described.

Dr. Russell C. Bond, Wheeling: The relation of allergy to sinusitis is very important. We know that an allergic patient is more susceptible to sinusitis and that one condition keeps up the other. This is often proven by a change of climate. I wonder sometimes if not only a change of climate but a change of household, of furniture, overstuffed chairs and ozite pads under the rugs, feather pillows that grandmother had in her family, are not important.

I was interested to hear Dr. Mitchell speak of steam heat. I think the home conditions should be considered in all cases because the child's nose is stuffy and it has a chronic discharge. I perhaps am a little old-fashioned in this view, but in the Ohio Valley where we are down among the hills we have fog and smoke from the mills, and even in the suburbs we get this heavy atmosphere at times. When I first started to practice I noticed a number of children got up in the morning with a stuffy nose, and I thought it was just the common cold again. It dawned upon me that especially in the fall and winter months there was something in the child's life or home habits which was responsible. During some of my night calls I would go into the rooms with the windows open, the fog pouring in and the room very cold. I started having the parents close the windows and open the door into the hall from the bedroom, thinking perhaps the fog, smoke and dampness were responsible for the reaction to the nose. Surprisingly, they cleared up very nicely, and I have quite a number of patients who now keep the windows closed in the child's bedroom and get fresh air from the hall.

When the children start out in the winter we call them back and say, "Come back here and put on your hat." We go into children's bedrooms at night and find the children snuggled under the covers up to their necks and bare heads out in zero weather with a cold draft. Perhaps they would be better off if they wore toboggan caps when they went to bed.

With the advent of modern heating and air conditioning I believe the elaborate units costing well above $2000 are unnecessary, but I do believe with present-day fan ventilation and furnaces we can get around having fresh air coming in at zero temperatures. We can have fresh warm air, which I believe is much better for this type of child than the open window. In my own family, for the past two years we have kept the air conditioner

on during the night, keeping our boy's room at a moderate temperature with fresh air but not zero fresh air.

I believe the matter of suction is important. Not all of us practice otolaryngology in our offices with our own suction machines. I don't do any laryngology work at all, but in patients who need some suction I have been using a little glass suction pump called the D-nasal suction pump, which the patient can learn to use. I think it is too powerful with a tight rubber bulb, the way it is made, but a few pinholes or needle punctures into the rubber bulb will cut the suction down 50 per cent, and with very gentle pressure after the instillation of nose drops by the mother, she can use the simple remedy of opening one side of the nose with the suction pump.

The question of tonsils in children will never be settled. For a long time I thought the only indication for tonsillectomy was that the child had a pair of tonsils. I now believe too many tonsils are removed. Children should be very thoroughly studied and if there is a definite indication for tonsillectomy it should be done, but the wholesale removal of tonsils is to be condemned.

Dr. V. E. Holcombe, Charleston: I feel that sufficient emphasis has not been laid on overmedication of the nose by the use of nose drops. We have all seen numerous cases of patients who come in with the nose blocked up who have been using all kinds of drops which I think cause edema of the mucous membrane and create a tendency toward sinusitis by blocking up the openings of the sinus.

I believe the removal of adenoid tissue is sometimes indicated in recurrent colds, apart from tonsillectomy.

We are told that x-ray treatment is indicated in acute swelling of the adenoid tissue about the neck and throat. I have seen a few cases where it acted in a very spectacular manner, particularly in cases of abscess in the lingual tonsil, and I think it is probably just as effective in acute swelling of the adenoid tissue.

I believe the antra should be washed out in children in case of protracted nasal discharge.

Dr. W. S. Shepherd, Charleston: I believe that allergies are very much on the increase, and there is a definite reason for it. Here is a concrete example. Our school physician told me there were certain schools in Charleston where you could not even budget a light meter; they put children into these dark corners to study. They do the same with reference to heating of the schools; one room at 60 and another at 80 degrees. The children are moved from one room to another. If the child is kept in a rather cool room rather than an overheated room he is very much benefited. I think if we give our children stronger bodies and let them run outdoors and play and wipe their noses on their coat sleeves as they did years ago, we will have less allergies and better citizens.

Dr. E. C. Mitchell, closing the discussion: The subject that I shall discuss first is my hobby: When shall tonsils and adenoids be removed? In the first place, a tonsil should never be removed unless it is diseased. If it is diseased at two years of age and you can definitely prove it is diseased by the history of repeated tonsillitis and glandular swelling, evidences of focal infection, take it out. If it is not diseased, let it alone. I think there is no age limitation.

I believe the early removal of tonsils undoubtedly predisposes to sinusitis. I have in mind the healthy tonsil, and we all know that healthy tonsils are removed. It is no indictment against us, but it is a peculiar fact that there are more tonsils removed in private practice in patients who can pay than in dispensary practice. You have all seen tonsil clinics where tonsils are promiscuously jerked out without any reference at all to whether they are diseased or not.

There is no doubt in my mind that a diseased tonsil may predispose to sinus infection, because there may be a direct extension from the diseased tonsil to the sinus. You have both sides to think of, but I will answer that question again by saying: Take out a tonsil when it is diseased.

Another thing, a large tonsil does not mean a diseased tonsil. Every man here has seen large tonsils at eight years of age and at fifteen he has seen the same tonsils at normal size. There is a rate of progression, as was brought out by Dr. Lyon, when this tonsil seems, by enlarging, to be performing a certain function. When this function ceases the tonsil ceases to grow and begins to retrogress.

A statement was made about the diagnosis of chronic sinusitis. The diagnosis cannot be made by x-ray alone; it cannot be made by transillumination alone, and it certainly cannot be made by in-

spection alone. You must make it first by a history that would seem to indicate there is trouble in the sinuses. Then you should make it by using all of these methods together, and then by exclusion of other causes.

I make the differential diagnosis between chronic sinusitis and allergic sinusitis first by x-ray; usually where there is a definite chronic sinusitis with pus in the antrum there is a fluid level, there is a difference in the appearance of the mucous membrane. Of course you must go into the allergic history. A point was brought out that eosinophilia both in the differential blood picture and also in the local smear was of value. Undoubtedly that is true.

Someone asked a question about the treatment by x-ray of lymphoid hyperplasia. I think that is beneficial and have seen some quite marked results at times.

Regarding the local treatment of sinusitis, I agree that drainage of the nose must be continued, but I think during the extremely acute stage if we use suction we probably increase the amount of blockage. I believe in heat, and rest in bed. I even sometimes believe in packing the nose with different solutions but I think conservative treatment for at least a time is probably better during the acute stage.

Regarding the hereditary factors, we have several such series which I can show you in slides. In one case the father was a sinus sufferer and had infantile sinuses. There was one son who looked exactly like the father in the face; he was one of a set of twins. They both had infantile sinuses and both had sinus trouble. The mother had a different type of face; she had large, well developed sinuses and she never had had any trouble. One of the twins and one of the other children exactly resembled her, and they had no trouble. There was no allergic background in the family. I do not give this as a general rule. It is just a result of experience that we have had several times in the course of our investigation.

Regarding air in cold weather, I think there are two sides. I agree both with the gentleman who says that sinuses are not benefited by cold air, and I also agree with the gentleman who had no hair and slept out in cold weather. Undoubtedly a sinus sufferer does not sleep as well in a cold room; he coughs more after the sinusitis develops. I have infantile sinuses, and that is one reason I became interested. The best year I ever had was when I was in the army in Fort Oglethorpe and slept outside the entire year; it was the only year that I didn't have sinus trouble.

At what age shall a child's sinus be drained? Certainly not before development takes place, but if there is pus in the sinuses I think there should be drainage. There has been a good deal of controversy as to whether it is sufficient to wash through the natural opening. Our experience over twenty years has led us to feel that the natural opening tends to close in the child, that the development of the sinus does not take place, that he requires frequent treatment. You all know that it requires an anesthetic to wash the child's antrum. An adult may have it done otherwise. We have found it much better to make an additional opening, as described in the operation. It saves future treatment. We have followed those children over a period of years and have found that they seldom if ever require much intubation in the future.

As to Helmholz's idea that the sinus is not a focus of infection, with all deference to Helmholz I do not agree with him. I have seen cases of pyelitis where we proved that there was an empyema of the sinus and when this empyema was drained the pyelitis cleared up, and not before it was drained.

In closing, I do not want to seem radical but I believe that sinus infection in children has a place; I believe that the time to cure it is during the period of growth. If we ventilate the sinus during adult life after growth has ceased, I agree with the old dictum that once a sinus always a sinus is true. If we drain it and establish ventilation during the period of childhood while growth still persists, then I think we get a cure by these sinuses again becoming normal in every respect.

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HOME OBSTETRICS*

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THE trend of present day obstetrics is to the hospitalization of all cases, especially in city and suburban communities. There are still many among the rural population and also a large number of suburban patients, who will demand home delivery and who think of hospitals as a place to go to die. Therefore if their family doctor insists they be hospitalized for deliveries, they will employ an incompetent midwife. Thus the doctor will lose, to some extent, the progress he has made in scientific medicine in his community, the patient and also an obstetrical fee.

The economical status of the patient, the prevailing customs of home deliveries and the difficulty of reaching hospitals, tend to encourage general practitioners in both rural and suburban centers to equip themselves to do good scientific home deliveries at a minimum risk and economical cost to the patient and a justification of their own conscience that the patient has had the best of care possible during labor and delivery. Home deliveries permit the patient to be with her husband and children in familiar surroundings, free of financial worry about hospital bills and more or less immune to her own dirt and happy in a routine home life which is very gratifying. Still the general practitioner doing obstetrics should not fail to recognize a grave complication, nor should he fear criticism from his patient or her family when he feels a consultant is necessary or the patient is sent to the hospital. The "trust to luck" obstetrician must fade into the past as one writer so aptly puts it. Therefore in complicated cases of pregnancy, where the doctor feels that an undue risk would be taken in trying to make a home delivery, but in turn listens to the patient and her family (and usually the families are the chief objectors to the hospitals) and lets them talk him into attempting a home delivery against his better judgment, he will find that the loudest criers against the hospital will be the first to accuse him of incompetency if a catastrophe occurs. When reminded of their objections to hospitalization, these objectors will come back with the comment, "Well we did not realize the danger as you did, so why did you let us talk you into something you know better than to do." As the cartoon says, "They'll do it every time."

THE AUTHOR

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The prenatal care of parturient women has made great strides in the past ten years. The incidence of a hurried call in the middle of the night to a confinement case for a patient whom you have not seen or checked, is becoming less because of the insistence of doctors on thorough prenatal care. The results obtained cause the patient to tell her friends and encourage them to see their doctor early in pregnancy.

My obstetrical training was under the supervision of a member of this society who is outstanding in obstetrics and one who has given much study, thought and planning of technique and equipment for home confinements. My prenatal care is patterned along his technique which includes a thorough initial general physical examination of the patient in my office. History of family characteristics and any tendency to bleeding or dwarf type of pelves or hard labors of a sister or mother is asked about, for it is noted that there is some similarity in family pelves. After the initial check which includes Wasser-

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mann, and pelvimetry, a basal metabolic rate is done if the history or examination reveals the need for one. The patient is instructed concerning diet, clothing, marital relations, exercise, the necessity of a dental examination and increased calcium intake. She is then urged to return each two weeks for a recheck.

At the time of onset of labor the patient is instructed to call when pains are recurring at a regular interval of ten to fifteen minutes. This usually allows plenty of time to reach the home and prepare for the delivery. If on external examinations, pains are mild and irregular, nembutal grains one and one-half is given and one capsule left to be given in two hours if necessary. I use very little morphine in home deliveries. An external examination of the abdomen to determine presentation, position and approximate level of the presenting part is made. If a wait of several hours is anticipated before the second stage is reached, the pubic hairs are clipped if the patient objects to shaving, cleansed with germicidal soap solution and painted with five per cent mercurochrome solution. Kotex pads are used before and after delivery. After these preliminary procedures a responsible member of the family, mother or grandmother, is told to call when the pains become severe, membranes rupture or "show" is evident, and I go on my way expecting to be called soon.

OBSTETRICAL BAG

The obstetrical bag should be large enough to contain the following: razor, antiseptic soap, one per cent solution of silver nitrate, No. 2 chromic catgut, gloves, sterile parchment paper sheets, pituitary extract, ergotrate tablets, soft rubber male catheter, mask, chloroform and ether, sterile towels, gauze, two or three sterile uterine packs, hypodermic syringe, needles, forceps, scissors, perineal retractor, scales to weigh baby (since the first question is what sex it is and the second what does it weigh), low obstetrical forceps, as I do not attempt any but very low forceps deliveries in the home. Supportive drugs such as coramine, caffeine and adrenalin chloride, ephedrine sulphate and morphine sulphate. The blood pressure apparatus and stethoscope are carried in my regular medical bag which is always available if needed.

The patient is instructed prior to delivery, that two large wash pans or metal basins, a bottle of lysol, several clean sheets, towels and a box of sanitary napkins will be needed at the time of delivery. If on external examination, the patient is found to be having good, hard and frequent contractions, and delivery is anticipated in next hour or so, we proceed to boil the instruments and gloves in one basin and another basin of water is boiled for preparing solutions. The hands are scrubbed carefully with germicidal soap and a brush. One c.c. of pituitrin is prepared in a syringe and placed where it will not become contaminated. Umbilical cord tape, scales and silver nitrate solution are set out in line; wrapped sterile gauze and towels are unpinned and placed where someone can hand them to me without contamination.

ADMINISTRATION OF CHLOROFORM

The patient's face is anointed with cold cream or vaseline and a damp towel is placed over her eyes. The mask is adjusted to fit her face and the chloroform bottle is adjusted to drop moderately freely. If a nurse or my office nurse is not available, whoever has given chloroform before or will volunteer to do so, is shown how to hold the mask and drop the chloroform and none is allowed to be given except while I am watching the emergency anesthetist. When the boiled instruments and gloves are brought in and placed on two chairs within reach, the patient is again sponged off with lysol solution and catheterized. With the patient in the dorsal position lengthwise on the bed, a sterilized paricloth sheet 36x42 inches is placed under the buttocks with the lower segment inside of her feet. A clean (not sterile) sheet is used to drape the patient's abdomen and legs, some member of the family or a neighbor woman, sits on the patient's left and holds her leg and I sit on side of the bed to patient's right with a basin of boiled water in which either

lysol or germicidal disinfectant has been added. Wet gloves previously boiled in the home, in a basin along with the instruments are used and only a right-handed glove is worn until the time for immediate delivery of the child's head, as it has been my experience one hand can be kept sterile more easily than both. Only very low income group patients are delivered in the home and they cannot afford to pay fees commensurable to having an anesthetist or nurse in attendance, so we depend on members of the family to hold legs, drop chloroform, hand things, take the baby and even massage the uterus postpartum, while the repair or episiotomy is being done. This is not ideal, but if the patient could afford nurses and anesthetists she could go to the hospital for delivery. In my home deliveries nembutal is used during first stage, chloroform for anesthesia in the second stage, and ether if repair is to be extensive. It is true that one has to watch the anesthetic as much as the delivery, but the above technique has proven satisfactory in most cases when the office nurse was not available. One c.c. of pituitrin is given after the placenta is delivered and ergotrate 1/320 grain every four hours thereafter for four or five days.

POSTPARTUM HEMORRHAGE

One of the most common and most feared complications in home obstetrics is postpartum hemorrhage. The management of these cases taxes the skill and ingenuity of the doctor much more in the home than in the hospital. A history of blood loss in previous labors, a hemophiliac tendency in the family, or anemia during her pregnancy will be recognized as precautionary signs. The first and second stages should be controlled by sedation and supportive treatment in slow cases, morphine and anesthesia in too rapid labors, with plenty of time for normal separation of the placenta in the third stage without Credé unless bleeding starts before separation is complete. Pituitary extract or ergot in large doses before the baby is born may tend to produce excessive bleeding in the third stage, although in some instances a small dose of one or two minims of pituitrin controlled by anesthesia during the latter part of the second stage may tend to contract the uterus immediately following delivery and prevent hemorrhage. As a rule pituitrin should not be given until after delivery. However, massage, oxytocics and Credé may fail to stop a hemorrhage, and manual extraction of the placenta with intrauterine packing may be necessary. If the patient has been properly prepared and sterile gauze is at hand, the danger of infection is no greater than the risk of immediate death from hemorrhage. Intravenous use of pituitary extract and ergot have lessened the incidence of uterine packs. Supportive measures in postpartum hemorrhage are indicated such as external heat, black coffee, caffeine or aromatic spirits of ammonia. If the patient is restless morphine one-fourth grain is given, and the foot of her bed elevated to overcome anemia of the brain. It not being advisable to move these patients for some time, a member of the family can be dispatched to the nearest hospital for an intravenous glucose set to support the circulation until the patient can be sent to the hospital, or a technician can match blood for transfusion. Citrated blood can be transported some distance if kept sterile and cold. Since postpartum hemorrhage is a grave emergency and there is no time to call for help or move a patient to the hospital, all obstetrical bags should be equipped with medication, towels and sterile uterine gauze packs for immediate home use in the event that a uterus must be packed.

OCCIPUT POSTERIORS

Postoccipital presentation in a primipara presents a very perplexing problem in home deliveries. It is true that a large per cent will, if given ample time, rotate to an anterior position and may be delivered without especial trouble, but those which do not rotate after sufficient time has elapsed, are the trouble-makers. Probably one-half of these persistent occiput posteriors will rotate, engage and progress in normal labor by manual

rotation with either right or left hand in the vagina using the other hand to rotate the baby's body externally and to continue pressure when rotation is completed, until the contractions fix the head in the pelvis before it turns back to a posterior. In the event this can be done, a difficult posterior is corrected into a normal delivery. In the remaining cases which fail to rotate, or if rotated persist in going back to posterior, the Scanzonian forceps rotation is used. In the hospitals with men like Doctors Montgomery, Bill, Vaux and others this procedure looks easy, but out in a lowly cottage by yourself without skilled assistance or proper table and instruments, one frequently gets cold feet and a perspiring brow and is prone to recommend immediate hospitalization where he can get help and moral support. In my opinion that is the smartest thing to do.

Breech presentations in the multiparous are not serious complications in home deliveries, providing plenty of time is allowed for complete dilatation and the descent of the presenting part to the perineal floor before extraction is done, but in primiparous patients the fetal mortality goes up because of lack of assistance and proper type of table if forceps are applied to the after coming head. If at all possible all diagnosed primipara breeches are hospitalized to facilitate delivery and safeguard in event of death of the baby.

INSPECTION OF CERVIX

In our home deliveries unless there has been a very rapid delivery in a primipara or a persistent bleeding with the uterus well contracted, the cervix is not pulled down for inspection because of the added risk of infection. In event of a rapid delivery the cervix is inspected and if lacerated it is repaired. Perineal laceration and episiotomy in home deliveries are repaired immediately as in hospitals, using catgut sutures and doing the repair layer by layer and not with through and through sutures. The patients are instructed to use lysol pour douches and a dropper full of four per cent mercurochrome solution following each evacuation or urination. The practical nurse or whoever cares for the patient, can do this when instructed and they are asked at each visit if this is being done.

With the proper shaving and preparation of the patient, antiseptic solutions and painting of the vulva and vaginal tract, the asepsis of instruments and gloves, postpartum infections are becoming less prevalent in home deliveries. Since the advent of sulfanilamide the mortality of postpartum infections has been greatly reduced but it is still one of the most feared of postpartum complications.

ADVICE TO PATIENTS

When prenatal patients come to the office they are told that the entire service of their pregnancy consists of prenatal, natal and postnatal care, and that unless they will carry this through they cannot expect the best end results. Several times during the daily postpartum visits for the first ten days they are again reminded to come to the office when their baby is six weeks old for a check-up. This consists of weight, blood pressure, size and consistency of mammary glands, muscular condition of abdomen, inspection of perineum, bimanual examination to determine size, position and consistency of uterus and adnexa, inspection of the cervix, cauterization of any erosion with vaginal tampon of ichthyol boroglyceride solution to help hasten the involution of the uterus and especially the cervix. These tampon treatments are given two or three times a week with home douches twice a day, until the uterus is thoroughly involuted, the cervix smooth and any leucorrhea cleared up. If on the six weeks check-up the patient's weight has not returned to somewhere near normal, she is given a diet sheet and in all cases an exercise chart is given in order that tone may be restored to the abdominal muscles. Contraceptive advice is given only when asked for by patients.

In some states and counties the county health unit or maternal welfare bureaus have a sterile package with linens, basins, etc., that are needed in home deliveries, which are available to doctors. These packages are usually put up by the county hospital and

are either furnished free to the doctor or at a minimum cost. They can be carried in the doctor's car and if not used in thirty days are taken back to the hospital and exchanged for another one so that they are always sterile. Dr. Plass of Iowa stated last summer in his lecture that in his county this system worked perfectly for doctors and patients alike, cutting down markedly or morbidity and mortality rate. West Virginia has no such set up in any county that I know of, but this would be a goal to work for. In some counties the Red Cross nurses have a project that covers home deliveries, but usually these nurses are only on day duty and so often their attendance at deliveries is impossible. Full time county health units with a wide awake county nurse who will encourage the patient to come in for prenatal and postpartum care will be an invaluable aid to the doctors in their home obstetrics. Each one of us should work for county health units in his or her respective county. Refresher courses that are given each summer help a lot in presenting new drugs and improving one's technique in the various phases of obstetrics.

THE VALUE OF THE DETERMINATION OF MUSCLE IMBALANCE IN REFRACTION*

By CHAS. T. ST. CLAIR, Jr, M. D.
Bluefield, West Virginia

THE AUTHOR

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In this paper it is my purpose to emphasize the value of the determination of muscle imbalance in refraction. I wish to make the subject simple, clear, and I hope instructive in the time allowed for its presentation.

The method we employ in refraction is definitely routine, and this order is always practiced.

On numerous occasions I have heard the complaint that extraocular muscle examinations cannot always be employed because of the time required. Contrary to this erroneous belief it can be done in a short time and with a rather simple procedure, bringing relief to the patient when the proper treatment is instituted if a muscle imbalance is found, as will be illustrated presently.

To be satisfied with having arrived at an exophoria or esophoria diagnosis, is not sufficient, as is noted by a statement of Dr. Avery Prangen of Rochester, Minn. "Too often," he says, "diagnosis of the muscular condition stops with the statement that the patient has exophoria or esophoria, in distance vision or in near vision. No further effort is made to coordinate the relation of the phoria in distance vision to that found in near vision and the relation of the phoria to powers of lateral and vertical duction."

The method of examination is as follows:

(1) History: In the history we make a careful study of the complaints of the patient, the type of work he does with his eyes, the hour of the day his symptoms usually appear. Especial consideration is given to the child or young adult of school or college age.

(2) Manifest: Another necessary step which is always employed, and naturally of a great deal of importance when carefully done.

(3) Following the manifest we do a muscle test, accommodation test, and following this with a cycloplegic refraction if necessary.

Leaving the line of thought for a moment I believe that a postrefraction certainly

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assures the ophthalmologist of his diagnosis and at the same time assures the patient of satisfactory service.

There are several methods of determining muscle imbalance. One of the simplest and perhaps the most correct is the cover test, augmented by the use of prisms. Our first procedure is to test the patient at 20 feet. If any muscle imbalance is found, this is corrected with prisms and after bringing the eyes to rest determining the degree of that imbalance. In the next move we use exactly the same steps, bringing the patient into a nearer vision field of an average reading distance. Following this we determine the near point of convergence.

USE OF PRISMS

I would like to outline a simple method in the use of them. The prism is in the shape of an arrow head. Its use is to deflect the rays of light. If the prism is remembered as an instrument of such use, the sharp end of the arrow is pointed toward the position you wish these rays to deflect the image. Another simple procedure of placing prisms is as follows: "In divergence the eye is turned out, the macula at the posterior pole is turned in. Since a prism deflects the rays, the base is turned in; if convergence, macula is out, therefore, base out. Also up and down movements explain these."

I again wish to emphasize that the above muscle examination takes only about four or five minutes of the examiner's time. Of course if you should strike an exaggerated muscle imbalance to be seen in a limited time, it is advisable to ask the patient to return later for further investigation.

I wish to speak here for a moment on the type of exercises that we give in muscle imbalance. We use prisms almost exclusively. Since the three cases that I am presenting have an exophoria with a far point of convergence, I will discuss only our routine use of prisms for an exophoria. For example, we shall say that a patient's chief complaint is blurring while reading. We find his near point of convergence is 150 mms. Our first step is to examine him with prisms. This step is explained in detail to the patient as we go along because he is to follow it later at home. A small black dot is placed on a white sheet of paper and we begin with a five degree prism placed base out. As this prism is brought before either one or the other eye, the instant that it is brought over he will see two dots. Later the dots converge as one. We next use a 10 degree prism and instead of the dots converging as one they remain separated. In such findings we give these patients a set of five degree, 10 degree, 15 degree, and 20 degree prisms to take home with them. These prisms are rented from the optical houses at a nominal charge.

HOME USE

In the use of prisms at home we instruct the patient as follows: First, he should be in a room alone, to concentrate on his efforts, and to avoid inquisitive spectators. The method of this exercise is as follows: A black dot is placed on a white card and held at about arm's length, and the prism is brought before the eye (either eye may be used at the patient's convenience) nearly touching the brow, and as soon as the dots converge into one the prism is removed, brought back again, removed, back and forth, etc. We have them perform this exercise of the prisms 15 to 20 times at one sitting at least three or four times a day. By overcoming a prism it means that the two dots are converged into one. Then we will say our patient has overcome a five degree prism but cannot overcome a 10 degree prism. We place this patient on five degree prism exercises for four or five days with instructions to move up to a 10 degree prism when he has overcome the five. When the 10 degree prism is overcome after at least several days trial, he then takes a 15 degree, following this with a 20 degree prism if possible. We try to have them reach a 20 degree prism. These patients are instructed to return in about two weeks after exercises start to see if they are performing the exercise properly and to determine what has been accomplished.

It is surprising to note the number of patients who come in requesting change in glasses, but after going over them we find a muscle imbalance as the cause for their distress. Placing them on the above routine we often succeed in relieving them of their symptoms. Naturally with a number of these patients some astigmatism is found. There are people who want glasses because of decorative purpose as much as for the benefit they derive from them. In such cases we supply them.

What I have said in the whole of the above is best illustrated I believe by three cases we have had in the past few months, which are outstanding cases of convergence insufficiency. The first two of these cases had been examined for glasses, one of them, the myopic case, twice within the period of a little over 12 months. So far as the refractive correction was concerned, it was correct, but no muscle determination had been made.

CASE REPORTS

(1) Mr. C. B., age 26, who gave the following history: He works in a bakery five days a week and during that time he had only slight symptoms from his eyes, chiefly headaches, which he would have probably two or three times a month while at work. However, on week ends when he did not work he indulged in considerable reading. During these periods he would have much headache and blurring of vision. He had been refracted about six months previously with no relief from his symptoms. On going over this man we found that so far as our refraction was concerned there was very little change from what he was wearing. However, on muscle examination the near point of convergence was over two feet. He was not able to overcome a five degree prism so we placed him on what I shall call a spot exercise. A black dot was placed on a small white card and was brought gradually nearer to his eyes until blurring or a diplopia occurred. At the end of about two weeks he was able to use a five degree prism at arm's length as described above. This was gradually worked up to a 15 degree prism. I saw this patient about three weeks ago and his near point of convergence was about 100 mm. His headaches had ceased and also his blurring while reading.

(2) The second case is that of a girl nine years of age, whom we saw about the middle of March. This child was a fairly high myope, wearing about a -2.50 sphere. This patient also complained of slight headaches at times and blurring vision, not only for just near but also for a few feet away. She was brought in by her mother because of a little difficulty she was having with her studies. On muscle examination this patient had near point of convergence of between three and four feet. The left eye, in practically each time that the near point of convergence was determined, was the one to roll out. We placed this child on convergence exercises but got nowhere with it, and in the past two months, in fact, she became worse. The parents were making a trip to the New York World's Fair and it was our desire to have someone else see this patient, so they stopped off on their way and she was gone over by Dr. Bloom at Johns Hopkins and a few days later by Dr. James W. White of New York. Both of them gave a diagnosis of paralysis of convergence.

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(3) The third case is that of a man 38 years old, whom I believe will illustrate best the importance of muscle exercise. This man had been accustomed to working out of doors for a lumber company. About the first of this year he was promoted to a much more responsible job than he had had in the past and which required him to spend much of his time in the office. Approximately one month after this he began to have headaches. These headaches became progressively worse and he was also nervous. Toward the latter part of March he was admitted to the Bluefield Sanitarium in a very nervous condition and suffering with intense headaches. He was gone over thoroughly, including a Kahn, complete blood count, basal metabolic rate, spinal puncture, etc., all of which were negative. It was believed by all who saw him, including myself, that responsibility of his new position was probably the cause of his condition. However, it was suggested that his eyes he gone over for glasses. His refraction showed that he would accept only a very low cylinder. However, on muscle examination he had a marked exophoria and a near point of convergence of about two feet, as was true of the first case I reported. This man was placed on muscle exercise. All his symptoms have disappeared and from his own words he feels like a new man.

In these three cases reported I would say that two of them were "cured," at least for the time being. However, as we all know, the convergency insufficiency may return, which can of course be treated again. In the other case, the girl with the myopia is the one that will have to be watched with perhaps some surgical intervention later.

DISCUSSION

Dr. Ben W. Bird, Princeton: I have enjoyed Dr. St. Clair's paper very much. It brings out several points which have been, until the last few years, either ignored or neglected. The science of refraction is receiving more attention than ever before. It is being placed on a physiological rather than a mechanical basis. Many refractionists find the correct sphere, cylinder, and cylinder axis and refer the patient to the optician, feeling that for better or worse the work is done. In the majority of instances this is true, but there are certain patients who never will be comfortable with a straight mechanical correction. It is being brought to our attention more forcibly every day that the refractionist must consider the matter of muscular imbalances as well as straight spheres and cylinders. As Dr. St. Clair has so well emphasized, the tests for these imbalances are simple and occupy but a few minutes of one's time.

Comfortable binocular fixation, particularly for near, is essential to the average individual who does not habitually suppress the vision of one eye. Measurable phorias are usually variable in degree in each individual, the amount depending upon the general physical well being of the entire organism. That is, from day to day we may find the amount of prism which a patient can overcome to be variant.

In agreeing with Dr. St. Clair that muscle tests are simply, easily and quickly performed, I do not believe that the cover test answers all of the questions we should routinely wish to know concerning the status quo of the extraocular muscular balance. The Maddox rod and Stevens phorometer are perhaps the most accurate tests for distance, combining accuracy with speed, while the Maddox wing test or Thorington muscle light gives quick and accurate estimations for near. Even these tests cannot be accepted at face value in all instances. There are certain patients who will require prolonged occlusion of one eye before a worthwhile estimate of the exact type and degree of phoria can be determined. This is especially true of the vertical phorias.

In exophoria, which Dr. St. Clair considers exclusively, prism exercises are of great value in younger subjects. The results are usually excellent. I have not been generally successful in presbyopes with prism exercises for exophoria. Simple adduction exercises combined with "ocular gymnastics" seem to be just as valuable, if not more so. In such patients it seems best to prescribe one or two centrad "pasters" for prolonged near work, or a special pair of reading glasses with one or two centrads of base out prism included. This can, in most lenses, be provided for by proper decentration. A very weak solution of pilocarpine, about one-fourth to the ounce, to be used in each eye morning and night, is often a valuable aid in patients with such a condition.

In vertical phorias and esophoria, prism exercises are not generally of much value. Hyperphoria is the cause of as much or more "refraction grief" than exophoria. The patient who develops headache and nausea from train or auto riding must be especially checked in reference to vertical phorias. Marginal blepharitis is another concommitant of vertical phoria. This condition usually requires correction by about two-thirds of the estimated necessary prism divided equally between the two eyes. It is variously estimated that in twenty to thirty per cent of all persons some degree of vertical phoria is present. It is particularly in this condition that the usual muscular tests are not always accurate and that one or the other eye must be completely occluded for ten days to two weeks before the tests are repeated. Of course the average patient in normal health, with a slight or moderate vertical phoria, will be comfortable and his symptoms disappear if given a proper correction.

In esophoria the fullest spherical correction which is possible for the patient to wear should be given, combined with stereoscopic exercises and general measures, such as elimination of caffeine and tobacco, proper rest, good illumination for close work, and mild sedatives when necessary. This is, of course, assuming that the full cylindrical correction is always supplied.

I do not believe that in considering the value of the determination of muscle imbalance we can deal with exophoria alone without considering the other main types of phorias. I am certainly in complete accord with Dr. St. Clair in urging that we make more careful studies of our patients who come

for refraction in regard to extraocular muscle examination, and that existing weaknesses be corrected when discovered.

Dr. H. V. Thomas, Clarksburg: I am impressed by the number of patients who become satisfied once symptoms disappear, and who are not very much interested in continuing so long as they are pain free. I think the discussion which has just been given has called attention to the fact that we must be more careful in our examinations. Those individuals who do have trouble are willing to come back and give us the time necessary to do a complete job, and if it can be done at the first sitting I certainly urge the job be completed regardless of the time element.

418 Bland St.

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ROCKY MOUNTAIN SPOTTED FEVER

(A Report of Two Fatal Cases)

By JOHN S. PEARSON, M. D.
Huntington, West Virginia

Rocky Mountain spotted fever is an acute specific infectious endangeitis, chiefly of the peripheral blood vessels, transmitted by ticks; it is characterized by an onset with chills, continued fever terminating in lysis, severe pains in bones and muscles, headache, and a macular eruption, becoming petechial, which appears first on the wrists, ankles, and back, and then over the whole surface of the body.

It was formerly thought that this disease was peculiar to certain discrete localities in the Rocky Mountains, having its greatest frequency in Idaho and Montana. However, it is now known to occur in the east, south, and the central middle western states. Probably increasing knowledge of the disease will disclose its presence throughout the entire country.

The causative organism, which was named dermacentroxenus rickettsii by Wolbach, is closely related to that which causes typhus fever. It is transmitted in the western type of the disease by the wood tick, dermacentor andersoni, and in the eastern type by the common dog tick. The disease is prevalent in the west during the spring and early summer, and in the east somewhat later.

The symptoms of the disease are initial chill, high fever, severe headache and pains throughout the body, a generalized petechial rash of the skin and buccal mucosa, and extreme restlessness and insomnia. There may be constipation, distention, vomiting, and retention of urine with incontinence.

THE AUTHOR

Dr. Pearson, graduate University of Virginia, 1939; interning at St. Mary's Hospital, Huntington.

The average duration of the non-fatal cases is about three weeks; when death occurs it is usually between the sixth and twelfth days. The mortality varies with the locality. In the eastern type it is said to be about 25 per cent.

All attempts at specific drug therapy have failed, and no other special measures have been described. The obvious symptomatic treatment is all that can be given; this includes hypnotics, a sustaining diet with plenty of fluids, sponge baths and enemas.

Prophylaxis consists of wearing protective clothing when in tick-infested areas, and examining the clothing and entire body at least twice daily. Parker believes that the practice of cauterizing tick bites with silver nitrate stick is beneficial. The United States Public Health Service prepares a preventative vaccine in its laboratories at Hamilton, Montana.

These cases are reported with the permission of Dr. J. S. Hayman, Huntington, West Virginia.

The recommended dosage is two injections of one c.c. each for children under ten years of age, and two injections of two c.c. each for adults.

Presented is the report of two cases of the disease in man and wife which terminated fatally.

Case 1, Mr. J. W. M.: This 67 year old white male was well and active until the onset of the present illness, i.e., ten days prior to admission to the hospital on July 15, 1939. He was a farmer by occupation and during the two weeks prior to the onset of the present illness he had been engaged in general farm work, particularly the cutting and storing of hay. On the fifth day of July he began to feel badly and complained of general malaise and rather severe muscle and bone pain. These symptoms became so severe that he stayed in bed the following day but did not call a physician until three days later. At that time he complained of severe muscle and bone pains, general malaise, and a sore throat. He was found to have a temperature of 101 degrees. On the twelfth day of July, the seventh day of the disease, he "broke out with a rash" which began on the wrists and backs of the hands and later spread over the entire body, exclusive of the face. Three days later he was admitted to St. Mary's Hospital for diagnosis and treatment. There was no history of known tick bite. The warte supply was from a private well which is considered safe. No one else drinking from this well except his wife became ill. There was no history of diarrhea or constipation. The past history was of interest only in that the patient had measles as a child, never had typhoid fever, nor had he had typhoid vaccine.

Physical examination on admission revealed a well developed but somewhat undernourished white male of stated age lying quietly in bed in a more or less prostrated condition and noticeably dehydrated. There was a marked injection of the conjunctiva. The tongue was of normal size but beefy red and furred. The throat was injected and there were several macular lesions on the palatal mucosa. The teeth were dirty and carious. The chest revealed no abnormalities to percussion and auscultation. The heart was enlarged to the left and downward, the maximum apex impulse being in the sixth interspace in the anterior axillary line. There were no murmurs heard. The heart sounds were regular but distant, the blood pressure was 98/72. There was a moderate thickening of palpable medium sized arteries. The pulse was regular but weak. The abdomen was tender throughout but without spasm or masses. The abdominal viscera could not be palpated. All extremities were tender to deep palpation. The reflexes were normal. The skin over the entire body except for the face, neck, palms and soles, was covered by a fine macular rash. These macules were not palpable but disappeared on pressure. There was a slight tendency to coalescence. The temperature was 98.4; pulse, 72; respirations, 20. The hemoglobin was 109 per cent Haden and the white blood count was 9,500 with 92 per cent polys, 54 per cent of which were stab forms. Agglutinations for B. typhosus, paratyphosus A and B, and undulant fever were negative. A urine specimen was not obtained.

This patient presented the picture of dehydration and prostration and was immediately given 1000 cc. of 10 per cent glucose intravenously. About noon the following day he began to urinate involuntarily and became comatose. Caffeine sodium benzoate gr. seven and one-half was given intramuscularly. That night he was started on digitalis gr. three every four hours. The following day the patient was found to have necrosis of the scrotum and the generalized rash was dimming, but a few rather prominent petechiae were noted. He became worse rapidly and respirations ceased at 12:40 p. m.

A specimen of blood taken on the evening of admission was sent to the state laboratory. It was reported showing an agglutination of 1/320 with B. proteus X19.

Autopsy done about three hours after death, revealed necrosis of the scrotum, generalized macular skin rash including palms, soles and buccal mucosa. There was moderate enlargement of the heart, marked scarring of both kidneys, generalized arteriosclerosis. Microscopic findings: Perivascular infiltration consistent with a diagnosis of Rocky Mountain spotted fever.

Diagnosis: Rocky Mountain spotted fever.

Case 2, Mrs. J. W. M.: The wife of Case 1. These cases are interesting in that the wife mirrored her husband's illness by one day later. On admission she had a temperature of 102; pulse, 108, and respirations, 28. The same rash that was present on her husband was generalized in this case

also, but seemed to be more acute and there were several petechial spots over the left shoulder.

Her course in the hospital was very similar to his and she died two days after he did, at which time she was found to have necrosis of the vulva. Permission for autopsy was not granted.

The state laboratory report on her blood reported agglutination of B. proteus X19 in dilution of 1/160.

Diagnosis: Rocky Mountain spotted fever.

SUMMARY

A review of the disease, Rocky Mountain spotted fever, and two fatal case reports are presented.

DIAGNOSTIC PROBLEMS

By JOSEPH D. ROMINO, M. D.
Fairmont, West Virginia

CLINICAL surgery offers many interesting and at times, confusing diagnostic problems. Many of these may or may not be solved with the aid of modern, adequate laboratory facilities.

However, in spite of the present day diagnostic methods and the growing tendency to rely upon the laboratory and other auxiliary reports for the diagnosis, the history and physical methods of examination should always remain the main channels by which a diagnosis is reached.

The surgeon or physician does not always see his patient at an institution or in a locality where such aids as the x-ray, metabolism machine, electrocardiograph and other diagnostic equipment are at his disposal. Often times he sees his patient in a home several miles away from telephone or even electric light, not to mention laboratory facilities. In this position the surgeon is forced to resort to nothing more than physical signs and his own diagnostic skill; not that which he has acquired in the clinical laboratory, but that which he has acquired in the greatest of all laboratories—the wards. When confronted with such a situation he realizes that whatever the disease may be from which the patient is suffering, the importance of diagnosing it as early as possible can hardly be overrated, and waiting for laboratory reports may mean loss of valuable time, and at times a patient's life.

We younger physicians have, at times, felt badly when an older, experienced physician would picture the recent graduate answering an emergency call, driving up to the patient's house followed by a trailer containing a fully equipped x-ray installation, and a laboratory with a staff of assistants. He would increase our misery by adding that without their aids the modern physician would be unable to formulate a diagnosis.

THE AUTHOR

Dr. Romino, Fairmont, graduate Rush Medical College; Assistant to Chief Surgeon, Fairmont Emergency Hospital; Instructor in Surgery, School of Nurses.

These remarks impressed me greatly when I recently examined a patient who had a multitude of complaints, fortunately located in one region of the body, all and none of which appeared to fit into a definite diagnostic entity and I must frankly admit that the true diagnosis was only revealed on the operating table.

True, such a case as this is only rarely seen, nevertheless it impresses one very much and is an excellent example of the multitude of possibilities which may exist in the human body, especially in the female pelvis.

HISTORY OF CASE

Mrs. E. M., age 37, was first seen by me May 31, 1938. Her principal complaint was continuous vaginal bleeding since April 5, 1938.

She stated that on that date, after going to bed feeling well, she was suddenly awakened during the night by a sharp pain in her right lower quadrant accompanied by what she believed at that

time were menstrual cramps. At about the same time she began having vaginal bleeding which had all the characteristics of a normal menstrual period. The pain persisted, though it became less severe and was soon accompanied by nausea and vomiting. A physician was summoned, who diagnosed acute appendicitis. Ice bags were applied to her right side but this measure offered only temporary relief. However, after two or three days the pain, though still present, was much less severe, but she continued to have vaginal bleeding, using three or four pads daily. She had lost eleven pounds since the onset of her illness. During this illness she had no chills and no fever nor was she aware of any similar distress on the left side.

All of her previous periods had been regular, occurring every twenty-eight days and lasting four or five days. Her last menstrual period began March 7 and was normal in every respect.

Fallopian Tube Intact, Tubal Pregnancy Unruptured.

She denied having had gonorrhea or syphilis.

The urinary history was entirely negative.

Her appetite had always been fair and the only gastrointestinal distress she had previously noted was that of constipation which had been much worse during her present illness, during which time she had not taken cathartics, but had several enemas with slight relief of her symptoms.

The findings on the first visit was as follows: Temperature, 98.2; pulse, 86; respirations, 22; blood pressure, 112/84; white blood cells, 12,160; red cells, 4,050,000.

Abdominal examination revealed marked tenderness in the right lower quadrant with no rigidity. A resistant mass was palpated immediately below the area of tenderness. The left side of the abdomen was entirely negative. Bimanual examination revealed a boggy enlarged cervix, a uterus slightly larger than normal, and a definite, tender, freely movable, non-pulsating elongated mass to the right of the uterus. Vaginal examination with a speculum further revealed a bleeding cervical polyp.

The remainder of the physical examination was entirely negative.

A diagnosis of ectopic pregnancy and cervical polyp was made and the patient ordered hospitalized for operation.

A laparotomy was performed and revealed an unruptured right tubal pregnancy on the anterior surface of which was an acutely inflamed appendix held snugly to the tubal wall by a band of omentum. An appendectomy and bilateral salpingectomy was performed and the cervical polyp removed.

The patient made an uneventful recovery and was discharged from the hospital June 16.

After reading the history of this case and the physical findings one can readily see an excellent problem in differential diagnosis and the improbability, if not the impossibility of an accurate diagnosis.

Such a case as this, demonstrates that laboratory diagnostic methods have their place, but that they should however only be second to the more time tried methods of clinical medicine.

Cracking of Joints

Cracking or snapping of joints, when unaccompanied with pain, swelling or other evidence of arthritis, is of no clinical significance, according to *The Journal of the American Medical Association* for November 25.

The development of the cracking, *The Journal* states, "is similar to that of the cracking that is made by children and occasionally by adults when the distal phalanx of a finger is suddenly pulled distally. The surfaces of interphalangeal joints which are suddenly pulled apart will cause a popping sound similar to, and perhaps produced in the same way as, the noise made by abruptly pulling the tongue away from the roof of the mouth. Just why this should occur more at certain times than at others in the same person or should be present to a high degree in some persons is not definitely known.

"An x-ray, of course, should be taken and a careful examination made to exclude pathologic conditions. In the absence of these, however, the patient should simply be reassured that he has nothing to fear from this harmless symptom."

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Tuberculosis in the male genital organs is believed to be secondary to some other tuberculous focus in the body, most commonly in the lung. Though the prognosis is discouraging and the treatment far from satisfactory, much progress has been made in this field in recent years. Miller and Lustok published a paper based on their observation of 61 male patients with genital tuberculosis, abstracts of which follow:

GENITAL TUBERCULOSIS

At the Sanatorium of the Jewish Consumptives Relief Society, 61 (4.7 per cent) of 1316 male patients admitted in an eleven-year period, had genital tuberculosis.

Genital tuberculosis may occur at any age but the vast majority of patients range from 20 to 40 years. The younger the patient the more virulent the infection. Genital tuberculosis is secondary to some other tuberculous focus in the body, usually the lungs. Ninety-five per cent of these patients had associated far advanced pulmonary tuberculosis and 86.8 per cent had sputum with tubercle bacilli. The infection may reach the genital tract directly by way of the blood stream, by way of the lymphatics and, secondarily, by continuity of tissue. The seminal vesicles and prostate are the primary seat of the genital tuberculous infection (though the epididymis gives more pronounced symptoms) and also the focus from which the bladder and kidneys in many cases are affected.

PATHOGENESIS

There are two general theories concerning the pathogenesis of tuberculosis of the male genital tract:

1. That the prostate and seminal vesicles are involved primarily in the genital system and that the disease may remain localized or spread as descending genital or ascending renal tuberculosis.

2. That the prostate and seminal vesicles are involved secondarily from other urogenital organs by dissemination through the lumens or walls of hollow viscera connecting them, ascending genital or descending renal tuberculosis.

The authors believe that the disease most frequently starts in the vesicles and prostate but may occasionally start in the epididymis and that the mode of infection is primarily hematogenous.

DIAGNOSIS

The difficulty in accurate diagnosis of the scrotal and prostatic masses has been emphasized frequently, yet the chief underlying cause is incomplete investigation.

The only method available for the examination of the prostate and seminal vesicles is palpation with the finger in the rectum. In the early stages of the disease no change may be demonstrable by this means of examination, but in the vast majority of cases definite signs are present. Irregular, firm but not stony hard nodules in the prostate recognized by means of touch indicate extensive involvement of this organ. Likewise when the seminal vesicles are felt as pencil-like bands, extending in an upward and outward direction from the upper margin of the prostate, extensive involvement of these organs is indicated.

Examination of the external genitalia is best done with the patient in a standing position facing the surgeon. Observations are made of alterations in the normal rugose appearance of the skin of the scrotum, the shape of the testicles and their relative position in respect to each other. Changes in the scrotal skin are sometimes a valuable guide, as shown by a smoothing out of the rugae and a wasting of the cellular tissue immediately beneath the dermis. Adhesion of the skin to the epididymis is a well known sign, as is also a sinus discharging creamy pus. A comparison of the mobility of the two testicles is sometimes helpful. A normal organ can be moved freely within its covering, particularly in the upward and downward direction. This movement is often restricted when tuberculosis of the genital organs is present. In the early stages a soft or even fluctuant mass at the site of the epididymis and involving it is present in a large percentage of cases. If untreated, it will result in ulceration and formation of a chronic sinus discharging pus or it will become a hard fibrotic or calcific mass. Late in the disease the epididymis may entirely lose its identity or, if it can be palpated, will be craggy and nodular. The vas becomes thickened and has beadlike prominences.

CLASSIFICATION

Genital tuberculosis has the same pathological characteristics as tuberculosis elsewhere in the body and a discussion of it must take into consideration the clinical-pathologic type of tuberculosis, as is done by the phthisiologist in classifying pulmonary tuber-

culosis. The authors have classified their cases into three groups, (a) catarrhal, eight cases; (b) ulcerative, 21 cases and (c) fibroid, 32 cases. (These subdivisions are carefully defined in the article.)

PROGNOSIS

The prognosis of genital tuberculosis does not depend entirely on the prognosis of the associated pulmonary lesion, as the authors discovered by comparing their series of cases with a comparable series of pulmonary tuberculosis without genital involvement. In fact, the presence of genital tuberculosis adds considerably to the gravity of the general disease and shortens the life expectancy. At the end of a one to eleven year period of observation, only 34.4 per cent of the authors' patients were alive.

TREATMENT

The surgical treatment recommended varies from a careful resection of the infected focus to the complete removal of the seminal tract. The immediate mortality rate of radical surgical management, the persistent draining sinuses that are frequent sequelæ of such intervention and the false rationale of removing a single focus and leaving the primarily infected prostate, have placed this form of therapy in general disrepute among phthisiologists and urologists versed in the management of tuberculosis.

The beneficial effect of ultraviolet therapy in extrapulmonary tuberculosis has been well known for many years. It is logical to choose a form of therapy which will lend itself to sharp localization to the desired areas, that is the prostate, the seminal vesicles and the epididymis thus producing the maximum local effect without doing any general harm. Irradiation of the epididymis alone has been common practice among the men who advocate this form of physical therapy for genital tuberculosis. It is the authors' belief that if radiation were given with equal intensity to the prostate and seminal vesicles, the most frequent primary seat of tuberculous infection in the genital tract, the result would be more certain and more rapid and reactivation would be less likely to occur.

The authors describe at some length their method of applying light therapy by means of the cold quartz lamp and report encouraging results in the treatment of the catarrhal and ulcerative types.

Genital Tuberculosis, Eli A. Miller, M.D., and Mischa J. Lustok, M.D., Jour. of Amer. Med. Assn., Vol. 113, No. 15, Oct. 7, 1939.

Food, Drug and Cosmetic Act

Ways in which the new Federal Food, Drug and Cosmetics Act may be expected to aid in the prevention and treatment of disease are discussed in *The Journal of the American Medical Association* for December 16 by Theodore G. Klumpp, M.D., Washington, D. C., who states:

"While it is impossible to forecast to what extent the new act will ultimately aid the physician in his function of preventing and treating disease, one of the fundamental purposes of the law is to safeguard the public health.

"A few of the ways in which the act is directed toward this end are:

"The sections proscribing dangerous drugs and devices and injurious cosmetics and effecting more stringent control over deleterious ingredients in foods should bring about a lower general incidence of poisoning from these sources.

"The provisions which require disclosure of the active ingredients of drugs, adequate directions for use and warnings will aid the public in making more intelligent purchase and use of drugs. Similarly, the physician will be in a position to know the nature of the medication taken by his patients.

"Of particular importance is the protection provided by the act against marketing of new drugs which have not been adequately tested for safety. The enhanced safeguards against variations in the strength, quality and purity of drugs should be of particular interest to those who administer them. Likewise, the requirement that the labels of foods offered for special dietary use bear adequate information to inform the purchaser fully as to its value, for such use will enable physicians more accurately to evaluate and advise their patients.

"This act does not include within its scope jurisdiction over advertising. In a separate bill, the so-called Wheeler-Lea Act, passed March 21, 1938, Congress specifically delegated the regulation of advertising of foods, drugs, devices and cosmetics to the Federal Trade Commission."

Bank or stored blood is an adequate source, for only about nine days, of plasma prothrombin, the clotting factor which helps prevent hemorrhages, declare Jere W. Lord, Jr., M.D., and John B. Pastore, M. D., New York, in the *AMA Journal.*

President's Page

In this, my initial effort to discuss with you the problems confronting the medical profession of West Virginia, let me say first of all that I fully realize the responsibility of the office of president of your Association, and deeply appreciate the honor which you have bestowed upon me. To the best of my ability I will endeavor to carry on the work of my able predecessor, Dr. Ray Bobbitt, and the long list of distinguished gentlemen who preceded him.

During the course of the next year, I hope to visit most if not all of our component county medical societies. In doing so, it is my earnest wish to become better acquainted with you and with the problems with which our different sections are confronted. I hope our Association members will write to me concerning any matters in which they feel I may be of some help, or about anything else which they think I should know.

The year 1940 shows much promise to the medical profession of this state. We have a number of active and agressive committees now at work on matters of state-wide importance, particularly in regard to graduate education and in regard to more adequate distribution of the costs of medical service.

A beacon light in the Association's history will probably be our joint meeting with the Medical Society of Virginia at White Sulphur Springs next July. Our Association's membership has reached its highest peak. Our financial structure is on a sound basis. With these things in mind, we should, with your help and guidance, accomplish much during the coming twelve months.

At this season of the year, when our minds and our hearts look towards new vistas, may I take this opportunity of wishing all of you happiness and prosperity for 1940.

Frank V. Langfitt
President.

West Virginia Medical Journal

P. O. Box 787
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CHARLESTON, WEST VIRGINIA

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DR. BOBBITT - DR. LANGFITT

The turn of the year marks the close of the successful and eventful administration of Dr. Ray M. Bobbitt as Association president, and the inauguration of Dr. Frank V. Langfitt, Clarksburg, to lead the forces of organized medicine in West Virginia through 1940. To

RAY M. BOBBITT, M. D.

Dr. Bobbitt we express the sincere appreciation of the profession for his capable and inspiring leadership during the past 12 months. To Dr. Langfitt we wish a successful and prosperous term, filled with achievement.

Reviewing the past year, perhaps the most interesting piece of work attempted by the Association was the long period of study put forth by the Low Cost Committee. While the results of this study indicated that the Association membership was strongly opposed to prepayment sickness insurance, the com-

FRANK V. LANGFITT, M. D.

mittee report crystallized attention on this important problem and brought about the creation of the present Medical Service Committee, which is giving its entire attention to the problem of adequate medical care to the indigent and low income groups.

For the coming year, we believe that the Association's most important work will be in the field of low income medical service and in graduate education for our own members. The Postgraduate Committee, created during Dr. Bobbitt's administration, is already pointing toward inauguration of a five year graduate program. Plans are now under way to present this program to our Association's House of Delegates in 1940.

As the Association's work dovetails from one administration into another, it is a source of much comfort to feel that our common welfare is being transferred from one capable

leader to another. In transferring Dr. Bobbitt's record card to the long list of distinguished past presidents, we welcome Dr. Langfitt to this group of outstanding men who have guided the destiny of organized medicine in this state since 1867.

FALL SPECIALTY SEMINARS

The Association's Postgraduate Committee, meeting in Charleston on December 19, voted to recommend to the House of Delegates next July that an annual fall seminar under Association sponsorship be put on each year for the benefit of the various sections and special societies. It was suggested that this fall meeting be held in a different place each year, for a period of five days, with each specialty receiving a full one day program.

The possibility of providing separate meetings for the specialties was first presented to the Association in Dr. W. R. Goff's report for the Scientific Committee last July. Dr. Goff called attention to the difficulty encountered by his committee in working out satisfactory arrangements for the sections and all of the special societies which meet conjointly with our Association, and suggested the possibility of separate meetings. The action of the Postgraduate Committee presents a definite proposal along this line.

In discussing this matter, members of the Postgraduate Committee felt there was not sufficient time available at the annual Association meetings for a thorough presentation and discussion of specialty problems, and that the sections and special societies should have more time for this purpose. It was pointed out that a fall seminar would provide a solution for this problem and would enable the Association to devote its annual meetings to scientific and economic problems of more general interest to the entire profession.

The JOURNAL has no recommendations of its own, but would be glad to receive communications from interested Association members discussing either side of this interesting proposal.

LIST PRACTICE AND COMPENSATION COMPETITION

That a determined effort will be made during the coming year to remedy the compensation and competitive abuses of list practice was indicated in the report of the Medical Service Committee to the Association Council on December 14, 1939. The Council gave specific authority to the Committee to take the matter up direct with the parties involved.

Dr. D. A. MacGregor, Medical Service Committee chairman, pointed out in his report that a committee survey of industrial hospitals showed that at least three hospitals were handling compensable injury cases through private agreements with employers of labor. The survey further indicated, he said, that hospital list practice was being carried on in two or more large townships where physicians were engaged in the private practice of medicine.

Dr. MacGregor informed the Council that it was the opinion of his committee that hospital list practice was not objectionable when confined to non-competitive mining communities and when compensable injury cases were handled through the compensation department, as provided by law. He felt that if these abuses were stopped, there would be few complaints against the list system. The committee requested Council support in its contention that all compensable injury cases be handled through the compensation department and that list practice be eliminated from all areas where doctors were engaged in the private practice of medicine.

In approving Dr. MacGregor's report, the Council instructed the committee to communicate with hospital owners whose hospitals were carrying on list practice in competitive areas or which were handling compensation cases through private employer agreements, and to request remedial measures within a reasonable time. It was the opinion of the Council and of the committee, brought out in the discussion of this matter, that the hospitals would welcome Association support in dealing with this problem.

General News

COUNCIL MINUTES

The Council of the West Virginia State Medical Association met in the Association Headquarters, Public Library Building, Charleston, at 2:00 p. m. on Thursday, December 14, 1939. The meeting was called to order by Dr. C. W. Waddell, chairman.

Those present were: Dr. Waddell, Dr. Ray M. Bobbitt, president; Dr. Frank V. Langfitt, president-elect; Dr. T. M. Barber, treasurer, and the following councillors:

Doctors A. P. Butt, Jr., Fred E. Brammer, Welch England, George Miller, R. J. Reed, Jr., R. V. Shanklin, B. S. Brake, Ralph Hogshead, R. K. Buford, R. J. Wilkinson.

Councillors-elect present were: Doctors H. L. Goodman, J. C. Peck, L. W. Deeds, and Raymond Sloan.

Others present were: Dr. D. A. MacGregor, chairman medical service committee; Dr. Eugene Brown, Dr. James L. Wade, Dr. L. D. Norris, and Mr. Joe W. Savage, secretary.

The minutes of the previous meeting were read and approved.

The report of the secretary was read by Mr. Savage and accepted on motion of Dr. Reed.

Dr. MacGregor reported for the Committee on Medical Service and submitted two recommendations for the consideration of the Council:

First: That the committee, with Council's approval, send a letter to all industrial hospitals in West Virginia requesting the hospitals to handle all of their compensable injuries claims through the Workmen's Compensation Department, as provided by law.

Second: Council approval of a letter to all county society secretaries requesting the county societies to take steps to eliminate hospital list practice in competitive areas and condemning the extension of hospital list practice in areas where doctors are engaged in the private practice of medicine.

The committee's report with the two recommendations were accepted on motion of Dr. Wilkinson.

Mr. Savage read the report of the Postgraduate Committee, mailed in by Dr. George Lyon, chairman, and the report was accepted on motion of Dr. Reed.

Dr. Deeds brought up the plan of the Farm Security Administration for prepayment medical service and, following some discussion, the minutes of the December, 1938 Council meeting were read to show that this matter had been referred to the various county societies for local consideration.

Dr. Reed and Dr. England discussed the new Prefix Doctor Bill at some length and provisions of the bill were explained by Dr. Buford and Mr. Savage.

On motion of Dr. Brake, duly seconded, the following members were elected to honorary life membership in the Association:

Doctors B. W. Eakin, Tams; W. B. Robertson, Belle; L. L. Aultz, Omar.

On motion of Dr. Reed, variously seconded, the Council passed the following resolution:

"WHEREAS, There is widespread agitation for the development of a program for national health, and

"WHEREAS, The members of the medical profession agree that the health of the citizens of the nation is of supreme importance to national welfare, and

"WHEREAS, Such a national program of health can only be developed by a process of evolution following prolonged study, and

"WHEREAS, All of the health activities of the nation can best be correlated and administered by a single executive department;

"*Therefore, Be It Resolved,* That it is the sense of the Council of the West Virginia State Medical Association, that it does recommend to the American Medical Association, through its Board of Trustees, that immediate efforts be made to develop activities toward carrying out the recommendation made by the Reference Committee on Public Policy and Legislation, in its report at the San Francisco meeting of the A. M. A., that it is the sense of the House of Delegates that there should be established a national department of health, the executive officer of which shall be a physician holding the degree of Doctor of Medicine, and who shall be established as a member of the president's cabinet as secretary of health.

"That a copy of this resolution be sent to the Board of Trustees of the American Medical Association, the United States Senators and members of Congress, from West Virginia, and the Honorable Paul V. McNutt, director of the Social Security Administration."

Dr. Waddell expressed the sentiment of the Council in regretting the loss through retirement of Doctors Reed, B. C. John, J. R. McClung, R. J. Wilkinson, Ralph Hogshead, R. V. Shanklin, and George R. Miller. Dr. Waddell also welcomed to the Council the following new members: Doctors J. C. Peck, C. B. Pride, L. W. Deeds, Raymond Sloan, H. L. Goodman, and George W. Easley. In closing, Dr. Waddell spoke of the splendid administration of Dr. Ray M. Bobbitt as president of the Association and pledged the support of the Council to Dr. Frank V. Langfitt, president-elect. Brief responses were made by Doctors Bobbitt, Langfitt, Miller, Reed, Shanklin, Wilkinson, Hogshead, and Goodman.

There being no further business to come before the Council, the meeting adjourned at 3:35 p. m.

JOE W. SAVAGE,
Executive Secretary.

SECRETARY'S REPORT

At this meeting of the Council is limited to one afternoon, this brief report will deal only with membership and finance, the two barometers of Association influence and stability. Other Association activities I am sure will be covered in committee reports.

The Association now has 1286 members which, I believe, is the largest membership in our history. This is an increase of 44 members over last year and an increase of 102 members over the past two years. Last year at this time we had 35 delinquent members. Today we have but 20. Since last January first we have taken in 127 new members, as compared with 123 new members in 1938.

At the close of 1938 we had 15 county societies 100 percent paid. Today we have 18 one hundred percent societies, and seven additional societies with only one delinquent each. The 100 percent societies are Barbour-Randolph-Tucker, Boone, Central West Virginia, Eastern Panhandle, Fayette, Hancock, Kanawha, Logan, Marshall, Mason, McDowell, Mercer, Potomac Valley, Preston, Raleigh, Taylor, Wetzel and Wyoming.

Five of the six councillor districts have made gains in membership and all councillor districts have a minimum of delinquent members. For the information of the councillors representing the different districts we would like to present the following breakdown of the distribution of our membership:

Districts	Memberships			Delinquents		
	1937	1938	1939	1937	1938	1939
First	216	196	224	9	5	5
Second	158	167	167	1	0	2
Third	137	135	146	0	1	4
Fourth	174	190	197	5	8	5
Fifth	206	209	206	13	10	3
Sixth	293	325	346	11	12	1
Totals	1184	1222	1286	39	36	20

As our fiscal year does not close until May first, I will attempt at this time to give you only a brief summary of the Association's receipts and expenditures during 1939. We have broken records in both departments. Our expenditures have been larger than ever before because of the $600 increase in salary granted me last year, because of legal expenditures of approximately $1,000, because of an extra conference of county secretaries and presidents last spring which cost approximately $600, and because of a great increase in committee activities, which has cost the Association about $750 in traveling expenses.

Our total income for 1939 will be a little more than $21,000, not including $5,000 in cash realized from the trade on the Nicholson house. Our expenditures for all purposes over the same period will approximate $22,500. However, this is not the close of our fiscal year and through careful spending for the next four months, we can probably absorb a part if not all of this overdraft by May first, when our annual audit is made.

The total expenditures amounting to $22,500 includes office maintenance and salaries, the entire publication of THE WEST VIRGINIA MEDICAL JOURNAL, payment of approximately $1,300 on the Nicholson insurance policy, legal expense of approximately $1,200, and the annual premium of $360 on our Fidelity annuity contract. To offset the overdraft of $1,500, there is increased cash surrender value on the Nicholson policy and the Fidelity contract of approximately $1,050 which will show as increased assets in the annual audit.

THE WEST VIRGINIA MEDICAL JOURNAL has enjoyed its most successful financial year, with a total profit for 1939 of $2,350. Our largest previous profit was $2,100 in 1930. Our unusually healthy JOURNAL profit this year has aided materially in carrying on the Association's many new activities.

Respectfully submitted,

JOE W. SAVAGE,
Executive Secretary.

MEDICAL SERVICE MEETING

The Association's Medical Service Committee met in the Association's headquarters in Charleston on December 14. Those preesnt were Dr. D. A. MacGregor, chairman; Dr. Ray M. Bobbitt, Association president, and Doctors R. O. Rogers, James L. Wade, R. H. Walker, Eugene Brown, members, and Mr. Joe W. Savage, ex-officio secretary.

Results of a committee conducted survey of industrial hospitals in West Virginia were presented which indicated that the great majority of industrial hospitals were taking care of their compensable injury cases through the Workmen's Compensation Department. The survey also showed, with few exceptions, that hospital list practice in West Virginia was confined largely to mining and isolated communities.

It was brought out in the discussion which followed that at least three hospitals were evading the Workmen's Compensation law through private agreements with employers of labor, and the committee agreed that such private agreements should be terminated and all compensation cases handled through the compensation department as provided by law.

The committee was also in agreement that list practice should not be tolerated in townships and other areas where doctors were engaged in the private practice of medicine. The committee's survey indicated that list practice was being carried on in at least two townships where doctors were engaged in private practice, and it was agreed that personal conferences with the persons involved should be held in the immediate future in an effort to work out a mutually satisfactory solution to this problem.

The chairman of the committee was instructed to bring these two matters to the attention of the Association Council and to request the support of the Council in backing up the committee's position.

The committee was much interested in a report on the Gary plan in McDowell county in which the check-off for hospitalization is placed in the general fund, a percentage earmarked for both hospitalization and medical and surgical service, and the fund prorated to the doctors and hospitals rendering service under the plan. Through this plan employees are given free choice of doctor and hospital. It was reported that a somewhat similar plan is now being worked out for employees of the Appalachian Electric Power Company in Welch.

LABORATORY CODE ADOPTED

A code governing approval of laboratories for syphilis serology in West Virginia was adopted by the Public Health Council at Fairmont on November 6, 1939. The code, which specifies the method of testing, is somewhat more lenient than the method recommended in 1938 by the American Committee on Evaluation of Syphilis Serodiagnostic Tests.

To be eligible for approval a laboratory must be located in West Virginia, must complete the questionnaire and agreement forms, must comply with minimum requirements and meet the sensitivity and specificity standards of the code. Reports of official laboratories of other state health departments will be honored.

Two months' advance notice shall be necessary to permit the State Health Department to make the necessary and time-consuming clinical and laboratory preparation for testing a known number of laboratories on a known number of tests at a given time each year. Fewer than a dozen laboratories cannot efficiently be tested at one time, because of the necessity for a large number of clinically and serologically known donors, and because almost as much time must be consumed in testing one laboratory as in testing a dozen.

Testing of laboratories applying for approval shall be carried out once annually, and laboratories will be notified in advance of the approximate date of the testing season. A certificate of approval shall be issued to a laboratory which satisfactorily completes the required official test specimen series, and shall cover a maximum period of two calendar years. Temporary certificate of approval may be issued to a laboratory for a period not to exceed four months after the laboratory has completed the examination of the required test specimen series. In case there appears to be cause for revocation of a certificate of approval, the matter shall be presented to the Advisory Committee on Laboratories for consideration and recommended action.

A certificate of approval shall be granted automatically to a laboratory which demonstrates a reasonable approximation to the American standards on sensitivity, and which obtains less than one per cent false positive results. A temporary certificate may be issued to a laboratory which on its first test specimen series shows a sensitivity rating approximating the American standards and not more than 10 per cent false positive results. A

laboratory holding a temporary certificate shall be given one opportunity to demonstrate improvement deserving a permanent certificate, by examination of an official retest specimen series before the expiration of the temporary certificate. If the retest results are not satisfactory, the matter will be referred to the Advisory Committee for recommended action after individual consideration.

CLASSIFIED ASSISTANCE CASES

In October, the JOURNAL reported an experiment in Fayette, Raleigh and Mercer counties which embraced a new method of payment for classified assistance clients of the Department of Public Assistance. Classified assistance cases, which comprise approximately 60 per cent of the entire relief load of West Virginia, include such groups as old age pension recipients, dependent mothers, blind cases, and in fact all groups not covered under the classification of general relief.

Prior to October first, all public assistance clients were provided medical and hospital care through general county relief funds. On that date the three-county experiment was inaugurated to test out the feasibility of allowing persons on classified assistance to pay for their own medical and hospital services through increased monthly grants of matched federal and state funds. This experiment worked out so successfully in the three counties that it was placed on a permanent state-wide basis on December first.

So that Association members will understand this new plan of rendering and collecting for medical service, we will cite the case of Mrs. Mary Elmore, which is typical. Mrs. Elmore, a widow with four children, was classified as a dependent mother. She received a grant of $18 per month from her county Department of Public Assistance. Her oldest girl had a severe pneumonia which required 10 days' hospitalization. Her total bill, including the doctor and the hospital, was sixty dollars. Instead of paying this bill for Mrs. Elmore, the county DPA office increased her monthly grant to $30 per month for a period of five months. Mrs. Elmore paid this extra $12 per month to her doctor and to the hospital and in five months the debt was settled.

In the original experimental work, it was feared that such clients as Mrs. Elmore would pocket the extra $12 per month and that it would not reach the doctor and hospital. However, through proper control and follow-up of clients, no instance of this kind was reported and it was then felt that the plan could be made state-wide.

Many doctors have wanted to know why it was necessary to resort to this backhanded way of paying for medical and hospital services, and why the additional monthly grant could not be turned directly over to the doctor and hospital. The reason given by the state department is that the increased grant is made up of one-half state and one-half federal funds. All grants involving federal funds must be paid to persons on relief. When only state funds are involved, payment can be made direct as in the case of general medical relief. By increasing classified assistance grants, as in the Elmore case, increased federal funds of approximately $60,000 per year are made available for medical and hospital service. It was for the purpose of securing these additional funds that the plan was inaugurated.

POSTGRADUATE COMMITTEE MEETS

The Association's Postgraduate Committee met at the Association headquarters in Charleston on December 19, 1939. Those present were Dr. George Lyon, chairman; Doctors T. W. Nale, D. C. Ashton, A. C. Woofter, F. R. Whittlesey, and R. D. Gill, members, and Mr. Joe W. Savage, ex-officio secretary.

Following several hours' discussion of the various problems relating to graduate education in West Virginia, the committee agreed to work out a five year graduate program, starting in 1941, to cover the entire state and to present this program for the consideration of the Association's House of Delegates in July.

Reports of studies carried out by sub-committees of the general committee indicate the following:

1. That an adequate five-year graduate program in West Virginia would cost between $6,000 and $8,000 per year.

2. That the employment of a full time or part time director of graduate education would be necessary in carrying out a successful program.

3. That financial support of the graduate program should be given by the West Virginia State Medical Association, but that a considerable proportion of the amount needed could be raised through other sources.

4. That a state speaker's bureau should be established for the benefit of county medical societies.

5. That each county medical society should have a rotating program committee to plan programs over a long period of time in order to cover all useful and practical subjects and to avoid needless repetition.

6. The state should be divided into two circuits with at least five centers in each circuit where graduate courses could be carried on.

The committee also agreed to recommend an annual fall specialty seminar under Association sponsorship, for the various sections and special societies of the Association.

CONFERENCE OF SECRETARIES

The annual Conference of County Medical Society Secretaries and Presidents will be held at the Daniel Boone Hotel, Charleston, on Saturday, January 6, 1940. Approximately 50 county society and State Association officials are expected to attend. The conference will be called to order at 10 o'clock on the morning of January 6 and will close the same afternoon. County secretaries and presidents and their wives will be honor guests of the Kanawha Medical Society at its annual dinner dance that evening.

The guest speaker for the conference will be Thomas A. Hendricks, secretary of the Indiana State Medical Association, a member of the Indiana State Senate and an astute observer of national trends in medical legislation. Mr. Hendricks appeared in November on the program of the American Medical Association Secretaries' Conference in Chicago.

Plans and methods for the guidance of West Virginia county medical societies and problems confronting the profession in this state will be presented in a well-rounded program made up of West Virginia talent. Among those who have been asked to appear on the conference program are: Dr. D. A. MacGregor, Wheeling, chairman of the Association's Medical Service Committee; Dr. George Lyon, Huntington, chairman of the Committee on Graduate Education; Dr. E. Newton DuPuy, secretary of the Raleigh County Medical Society; Dr. James L. Wade, president of the Academy of Medicine of Parkersburg, and Mr. A. W. Garnett, director of the West Virginia Department of Public Assistance.

CITIZENSHIP REQUIRED

Citizenship has been required for some time in order to obtain a license to practice medicine in West Virginia. This requirement is not in the statutes. However, it is a regulation of the State Board of Medical Examiners, instituted and enforced because the board felt that it would be upheld in the courts if it should be brought under judicial review.

It is, therefore, interesting to note that the matter was brought into a state court for the first time in Texas recently, according to the *Journal of the American Medical Association*, and that the decision of the district court of Travis county, Texas, upheld the regulation.

Citizenship was required by statute in Texas but the constitutionality of the statute was challenged by a Mexican physician on the ground that the constitution of the United States guarantees the right of an alien to follow any common occupation under the same condition that it imposes on citizens.

The court ruled that the practice of medicine is not a common occupation but a profession impressed in many instances with official and semi-official duties.

DR. BUTTERFIELD RESIGNS

Dr. Donald L. Butterfield, director of Medical Service for the West Virginia Department of Public Assistance, resigned that office on December 20 to take effect the first of the year. Dr. Butterfield has accepted a position as mine physician at Milburn in Fayette county, West Virginia. At press time, his successor had not yet been appointed.

Dr. Butterfield joined the Department of Public Assistance as medical advisor in 1937 and later became the director of Medical Service. He was in charge of the indigent medical service program, the crippled children's department, the bureau of adult physical rehabilitation and all other medical, surgical and hospital activities of the department.

NATIONAL PHYSICIANS COMMITTEE

When Mr. Frank Gannett, newspaper editor of New York state and the inspiration of the National Committee to Uphold Constitutional Government, allowed his name to be proposed as presidential candidate for the Republican party, the nonpartisan character of this committee became lost. The Physicians' Committee for Free Enterprise in

Medicine, which was closely associated with the Gannett committee, lost thereby its non-partisan character. For this reason a group of prominent physicians formed a new committee, which is known as the National Physicians' Committee for the Extension of Medical Service, to carry on the activities of the Physicians' Committee for Free Enterprise in Medicine in a strictly non-partisan way.

Dr. B. H. Swint, Charleston, and Dr. C. W. Waddell, Fairmont, are the West Virginia representatives.

The purposes of the national committee are the making more widely available the services, more generally known the achievements, and safeguarding the independence of American medicine.

The purposes of the national committee supplement and in no way conflict with the activities of the A. M. A. It is not generally understood that the propaganda and legislative activities of the A. M. A. are limited, inasmuch as its main function is the scientific betterment of its members. If any considerable part of its activities were devoted to legislative affairs, the organization would be subject to enormous income tax according to federal regulations.

Obituaries

G. J. E. SPONSELLER, M. D.

Dr. George J. E. Sponseller, Martinsburg, prominent eastern panhandle physician and former president of the Eastern Panhandle Medical Society, died suddenly on November 14, 1939, at the age of 66 years. In recognition of his more than 40 years of service to his profession and his professional association, Dr. Sponseller was last year elected an honorary life member of the West Virginia State Medical Association.

The deceased was graduated in medicine from the University of Louisville in 1894 and two years later received his West Virginia license to practice. Soon thereafter he affiliated with the Eastern Panhandle Medical Society and was recognized as one of its most active and illustrious members.

A memorial to Dr. Sponseller, adopted by his county society, read in part: "He died, as he had lived, endeavoring to help the unfortunate, leaving behind him as a heritage such a wealth of gratitude and devotion that his life's work should serve well as an inspiration to us of his chosen profession."

County Society News

BARBOUR-RANDOLPH-TUCKER

Dr. Hu C. Myers of Philippi was elected president of the Barbour-Randolph-Tucker County Medical Society at the regular meeting held at the court house at Philippi on the evening of December 21. Dr. Myers succeeds Dr. J. M. Brand of Coketon. Dr. L. U. Lumpkin, Elkins, and Dr. S. J. Skar, Davis, were elected vice presidents, and Dr. Guy H. Michael, Belington, was reelected secretary-treasurer. Dr. W. G. Harper and Dr. F. B. Murphy were elected to the board of censors.

During the business session, Dr. Donald R. Roberts of Elkins was elected to membership. A committee consisting of Dr. Hu Myers, Dr. A. H. Woodford and Dr. A. P. Butt was appointed to make further study and recommendations regarding the Wagner health bill.

The scientific program was presented by Dr. Fred R. Whittlesey of the University School of Medicine, Morgantown, who gave a very interesting talk on pneumonia and its treatment. A lengthy and informative discussion followed.

GUY H. MICHAEL, *Secretary*.

BOONE COUNTY

The Boone County Medical Society met in regular session at the office of the health department at Madison on December 14. Dr. P. A. Tuckwiller of Charleston rendered a paper on "The Diagnosis and Treatment of the Anemias." This was followed by round table discussion of the anemias in which Drs. Pauley, Harless and Howell took an active part.

Dr. A. P. Hudgins also of Charleston, gave a very profitable lecture, illustrated by lantern slides, on the "Leucorrheas of Pregnancy." This was followed by discussions in which Drs. Harless, Hunter, Howell, Gerhardt and Pauley took an active part.

Election of officers was deferred until the January meeting. This will be held on January 24, at which time there will be moving pictures showing many of the problems of the doctor, the health officer and nurses.

R. L. HUNTER, *Secretary*.

CABELL COUNTY

The regular monthly meeting of the Cabell County Medical Society was held at the Hotel Pritchard, Huntington, on the evening of December 14, with Dr. W. Carl Kappes, Huntington, as the essayist. Dr. Kappes gave a highly interesting presentation on "Nodular Goiter."

The program also included a motion picture on "Modern Methods of Anesthesia."

New officers of the Cabell Society, elected at the annual fall meeting, are Dr. W. F. Beckner, president; Dr. George Lyon, vice president; Dr. Frank Barker, treasurer; Dr. Jay L. Hutchinson, secretary, and Dr. James Klumpp, censor.

JAY L. HUTCHINSON, *Secretary*.

EASTERN PANHANDLE

Dr. G. P. Morison, Charles Town, was elected president of the Eastern Panhandle Medical Society at the December 13 meeting at Martinsburg. Dr. W. L. Haltom and Dr. C. C. Johnson were elected vice presidents and Dr. M. H. Porterfield, Martinsburg, was reelected secretary-treasurer.

The program for the December 13 meeting was a cancer institute sponsored jointly by the society and the Eastern West Virginia Division of the Women's Field Army. Speakers were Dr. L. Clarence Cohn, associate of the late Joseph Colt Bloodgood, and Dr. William Neill, associate of Howard Kelly, both of Baltimore. Both Dr. Cohn and Dr. Neill addressed the noon luncheon of the society. At three o'clock, Dr. Cohn conducted a cancer clinic for physicians while Dr. Neill gave a public lecture on cancer at the Shenandoah Hotel. Cancer exhibits of the American Society for the Control of Cancer were on display from morning until 10 p.m.

The next meeting of the society will be held in Charles Town in March, 1940.

M. H. PORTERFIELD, *Secretary*.

FAYETTE COUNTY

Dr. R. A. Updike, Montgomery, was elected president of the Fayette County Medical Society at the regular monthly meeting at the Montgomery Woman's Club on December 5, 1939. Dr. Updike succeeds Dr. C. E. Watkins of Harvey. Dr. C. H. Engelfried, Montgomery, and Dr. Philip Becker, Kimberly, were elected vice presidents, and Dr. Gilbert Daniel, Alloy, was reelected secretary-treasurer.

Other officers elected at the meeting on December 5 were Dr. A. E. Bays, Montgomery; Dr. W. P. Bittinger, Summerlee, and Dr. William R. Laird, Montgomery, board of censors. Dr. R. H. Jones, Montgomery, and Dr. N. L. Cardey, Winona, were elected delegates to the state meeting with Dr. M. A. Moore, Longacre, and Dr. Bittinger, as alternates.

The scientific program was devoted to a discussion of "The Modern Treatment of Pneumonia," by Dr. William B. Porter, Professor of Medicine, Medical College of Virginia, Richmond. This was an excellent presentation of serum and chemotherapy. Dr. Updike opened the discussion, and a liberal general discussion followed.

Dr. Updike has announced the next meeting for Tuesday, January 9, 1940, in the Woman's Club at Montgomery. The society is bringing Dr. A. Carlton Ernstene, Cleveland Clinic, who will speak on "Bedside Diagnosis of Cardiac Disease." Interested members of neighboring county medical societies are cordially invited.

GILBERT DANIEL, *Secretary*.

GREENBRIER VALLEY

Dr. Guy Hinsdale, medical director of the Greenbrier Hotel, White Sulphur Springs, was elected president of the Greenbrier Valley Medical Society at its last regular meeting. He will succeed Dr. J. G. Leech of Quinwood. Dr. D. G. Preston, Lewisburg, was elected vice president and Dr. A. G. Lanham, Ronceverte, was elected secretary-treasurer.

A. G. LANHAM, *Secretary*.

HANCOCK COUNTY

Dr. Thomas H. Bruce, New Cumberland, was elected president of the Hancock County Medical Society at the annual business meeting held at the Williams Country Club, Weirton, on the evening of December 6, 1939. Dr. Bruce succeeds Dr. A. A. Yurko, Weirton. Dr. A. Sunseri, Weirton, was elected vice president, and Dr. Godfrey L. Beaumont, New Cumberland, was elected secretary-treasurer to succeed Dr. Bruce.

G. L. BEAUMONT, *Secretary*.

HARRISON COUNTY

Dr. George F. Evans, Clarksburg, was elected president of the Harrison County Medical Society at the annual business meeting on the evening of

December 7. He succeeds Dr. James G. Ralston, who has served during the past year. Dr. Creed C. Greer was elected vice president; Dr. L. E. Neal, secretary, and Dr. R. T. Humphries, treasurer.

Delegates elected to represent the society at the state meeting were Dr. H. V. Thomas, Dr. James G. Ralston and Dr. C. O. Post. Alternates were Dr. H. H. Golz, Dr. W. H. Allman and Dr. J. Frank Williams. Those elected to the board of censors were Dr. A. T. Post, Dr. E. B. Wright and Dr. H. V. Thomas.

MARCUS E. FERRELL, *Secretary.*

KANAWHA COUNTY

Dr. Victor Fishback of Cincinnati, Ohio, was the guest speaker at the meeting of the Kanawha Medical Society, which was held at the Daniel Boone Hotel, December 12. His subject was "Nasal Infections," which was a practical presentation of this general problem.

The annual dinner dance and installation of officers of the society will be held at the Daniel Boone Hotel on the evening of January 6, 1940.

A. SPATES BRADY, JR., *Secretary.*

LOGAN COUNTY

The annual banquet and election of officers of the Logan County Medical Society was held at Logan on the evening of December 13, 1939. Dr. W. H. Parker, Braeholm, was elected president to succeed Dr. J. L. Patterson. Dr. C. A. Davis, Logan, was elected vice president and Dr. J. W. Carney was reelected secretary-treasurer.

Dr. R. C. Haislip was accepted to membership in the society through transfer from Raleigh county. A transfer was issued to Dr. J. E. Whitehill, who recently located in McDowell county.

J. W. CARNEY, *Secretary.*

MASON COUNTY

The regular meeting of the Mason County Medical Society was held at Point Pleasant on the evening of December 19 and the election of officers for the coming year took place. Dr. E. L. McElfresh, Point Pleasant, was elected president; Dr. C. W. Petty, Hartford, vice president, and Dr. J. H. Toupkin, secretary-treasurer.

The next meeting of the society will be a dinner meeting at Point Pleasant, for the doctors of Mason and Putnam counties. A large turnout is expected.

J. H. TOUPKIN, *Secretary.*

MONONGALIA COUNTY

Dr. G. Ralph Maxwell, Morgantown, was elected president of the Monongalia County Medical Society at the annual business meeting held at the Hotel Morgan on the evening of December 5, 1939. Dr. Maxwell will succeed Dr. E. F. Heiskell, who has served during the past year. Dr. William B. Scherr was elected vice president; Dr. Carl E. Johnson, secretary, and Dr. L. W. Cobun, treasurer. Dr. Franklin T. Scanlon was elected delegate to the state meeting.

OHIO COUNTY

Dr. Frank Lahey of the Lahey Clinic, Boston, was the guest speaker at the meeting of the Ohio County Medical Society, which was held at the Ohio Valley General Hospital, Wheeling, December 1. Dr. Lahey gave a most interesting paper on "Various Thyroid States, Their Diagnosis and Management." Discussion was led by Dr. J. R. Caldwell and Dr. R. B. Bailey. Dr. Earl S. Phillips, president, presided.

Dr. I. S. Ravdin, Professor of Surgery, University of Pennsylvania, Philadelphia, was the guest essayist at the meeting of the society December 15. His subject was "Some Problems in the Management of Patients with Biliary Tract Diseases." Discussion was led by Dr. O. M. Staats and Dr. Arley McCoy.

The annual Jacob Schwinn Scientific Lecture will be presented by Dr. W. P. Sammons, Wheeling, on the evening of January 12. His subject will be "Compressed Fractures of the Vertebrae."

R. W. LUKENS, *Secretary.*

PARKERSBURG ACADEMY

Dr. James L. Wade, Parkersburg, was elected president of the Academy of Medicine of Parkersburg at the annual meeting of the society held at the St. Joseph's Hospital on the evening of December 6, 1939. He will succeed Dr. W. R. Goff. Dr. Athey R. Lutz was elected vice president and Dr. A. C. Woofter was reelected secretary-treasurer.

Members of the board of trustees elected at the December 6 meeting were Dr. Charles Goodhand,

Dr. Welch England, Dr. Holmes Blair, all of Parkersburg, and Dr. W. C. Camp, Spencer.

During the course of the business session, the annual report of the secretary and the annual financial report were presented and approved. Dr. Gene Harsha, Sistersville, and Dr. William D. Tillson, Parkersburg were elected to membership.

A. C. WOOFTER, *Secretary*.

RALEIGH COUNTY

Dr. B. B. Richmond of Skelton was elected president of the Raleigh County Medical Society at the annual business session which was held in Beckley on the evening of December 21. Dr. Richmond succeeds Dr. L. M. Halloran of Beckley.

Other officers elected at the December 21 meeting were: Dr. John W. Whitlock, Amigo, first vice president; Dr. J. E. McKenzie, Beckley, second vice president, and Dr. E. Newton DuPuy, Beckley, secretary-treasurer. Doctors E. S. DuPuy, R. G. Broaddus and D. B. Jarrell were elected on the board of censors. Doctors D. C. Ashton, L. M. Halloran and E. B. Wray were elected state delegates, with Doctors A. C. Echols and C. A. Smith as alternates.

E. N. DUPUY, *Secretary*.

Risk of Primary Tuberculosis Infection

The risk of primary tuberculosis infection among those engaged in the care of patients with this disease is emphasized by the exceptionally high infection rates among such workers in Minneapolis and St. Paul, which are cited in *The Journal of the American Medical Association* for December 16 by C. A. Stewart, M.D., F. E. Harrington, M.D., J. A. Myers, M.D., R. E. Boynton, M.D., P. T. Y. Chiu and T. L. Streukens, Minneapolis.

Examining various groups of nurses and medical students, the investigators found that the rate of primary infection ranged from 19.8 per cent annually for 344 student nurses who spent three years in hospitals with six weeks devoted to training in special tuberculosis wards, to 115.4 per cent, computed on an annual basis, for 158 nurses who gave negative tuberculin reactions immediately before they undertook a tuberculosis service of six weeks' duration. These figures are contrasted with an annual primary infection rate of 0.8 per cent among 1,278 children and of 1.6 per cent in 1,192 of their parents.

Public Health

The material in this monthly column is compiled and furnished by the West Virginia State Health Department

Birth Registration

A tightening of the regulations governing birth registration, so as to conform with Federal standards, was passed at the recent meeting of the State Public Health Council and will become effective January 1, 1940. This applies particularly to delayed birth certificates. The definition given for a delayed certificate is "one filed in any year subsequent to the one in which the child was born." In the past such records were accepted merely on the affidavit of any older person who was present at the birth.

During the past few years there has been an increasing demand for more adequate proof as the value of the birth record has increased as documentary evidence. This is particularly true under the Social Security law where the demand for proof of age is necessary.

With greater attention now being paid to the age at which persons are leaving school and seeking employment it has become more and more necessary to place some safeguards on the truth of records of age. Since the beginning of the war and the evidence of espionage which has recently come to light, the place of birth, which at one time was considered of less importance, has assumed greater significance.

There is ample evidence to show that where there is something to be gained that the unsupported affidavit of a person who will profit by a faked statement has too little value. While the new requirements may cause a little more difficulty for physicians, they are necessary if the State Health Department certificates are to stand in court.

Some doubt has been expressed as to the wisdom of registering persons over 14 years of age, but it is thought that to fail to do this would work a hardship.

One form of documentary evidence not included in the list given but which might be accepted would be original records or photostatic copies of the physician's private records, made at the time of the birth, together with a certificate from the physician stating that the records were made at the time stated.

ACTIVE AND HONORARY MEMBERSHIP

WEST VIRGINIA STATE MEDICAL ASSOCIATION

(Editor's Note—Below will be found the names of all active and honorary members in good standing in their respective county societies. The asterisk (*) appearing before a name indicates honorary membership. From this type will be published the annual Association directory of members. Will each member please check his own name and address and notify the Journal at once if any error is made.

BARBOUR-RANDOLPH-TUCKER

H. H. Bolton ..... Pierce
J. M. Brand ..... Coketon
Edward S. Brewster ..... Elkins
A. P. Butt ..... Elkins
P. C. Chenoweth ..... Elkins
R. J. Condry ..... Elkins
H. A. Conrad ..... Elkins
Edwin J. Euphrat ..... Elkins
A. K. Fidler ..... Elkins
B. I. Golden ..... Elkins
T. M. Goodwin ..... Elkins
P. L. Gray ..... Elkins
C. H. Hall ..... Elkins
W. G. Harper ..... Elkins
E. M. Jeffries ..... Philippi
L. S. King ..... Philippi
Fritz Levy ..... Elkins
B. L. Liggett ..... Mill Creek
L. U. Lumpkin ..... Elkins
Emory H. Main ..... Philippi
Joseph E. Martin ..... Elkins
L. C. McGee ..... Elkins
G. H. Michael ..... Belington
J. H. Miller ..... Thomas
J. L. Miller ..... Thomas
S. G. Moore ..... Elkins
Franklin B. Murphy ..... Galloway
E. E. Myers ..... Philippi
H. C. Myers ..... Philippi
K. J. Myers ..... Philippi
Donald R. Roberts ..... Elkins
S. J. Skar ..... Davis
W. S. Smith ..... Philippi
C. G. Stroud ..... Brownton
S. Weisman ..... Parsons
W. E. Whiteside ..... Parsons
J. R. Woodford ..... Philippi
T. L. Woodford ..... Junior
*J. L. Bosworth ..... Mill Creek
*A. M. Fredlock ..... Elkins
*E. M. Hamilton ..... Belington
*H. K. Owens ..... Elkins
*C. B. Williams ..... Philippi

BOONE SOCIETY

W. L. Barbour ..... Whitesville
A. E. Glover ..... Madison
W. F. Harless ..... Madison
R. L. Hunter ..... Madison
A. C. Lewis ..... Seth
C. E. Lewis ..... Nellis
D. F. Pauley ..... Jeffrey
F. G. Prather ..... Wharton

BROOKE SOCIETY

W. T. Booher ..... Wellsburg
F. T. Dare ..... Wellsburg
H. L. Hegner ..... Wellsburg
Leo Huth ..... Follansbee
S. S. Jacob ..... Bethany
Ralph McGraw ..... Follansbee
J. P. McMullen ..... Wellsburg
R. C. Otte ..... Wellsburg
S. D. Steiner ..... Wellsburg

CABELL SOCIETY

J. H. Baber ..... Huntington
R. E. Bailey ..... Hamlin
J. F. Barker ..... Huntington
H. E. Beard ..... Huntington
W. F. Beckner ..... Huntington
O. B. Biern ..... Huntington
R. G. Blackweler ..... Huntington
J. R. Bloss ..... Huntington
R. M. Bobbitt ..... Huntington
Clarence H. Boso ..... Huntington
W. D. Bourn ..... Barboursville
J. J. Brandabur ..... Huntington
B. F. Brown ..... Huntington
F. A. Brown ..... Huntington
J. R. Brown ..... Huntington
W. F. Bruns ..... Ceredo
V. L. Chambers ..... Huntington
Leo Christian ..... Huntington
F. L. Coffey ..... Huntington
J. R. Cook ..... Huntington
Robt. W. Coplin ..... Huntington
A. W. Crews ..... Huntington
D. J. Cronin ..... Huntington
R. H. Curry ..... Barboursville
W. F. Daniels ..... Huntington
L. F. Dobbs ..... Huntington
Ross Dodson ..... Huntington
C. S. Duncan ..... Huntington
F. F. Farnsworth ..... Milton
J. W. Ferguson ..... Kenova
T. G. Folsom ..... Huntington
C. P. S. Ford ..... Huntington
J. C. Ford ..... Huntington
J. D. B. Galloway ..... Huntington
L. B. Gang ..... Huntington
E. W. Garred ..... Milton
B. D. Garrett ..... Kenova
E. B. Gerlach ..... Huntington
A. P. Gibson ..... Huntington
J. A. Guthrie ..... Huntington
O. L. Hamilton ..... Huntington
J. C. Hardman ..... Huntington
R. Hardwick ..... Huntington
I. R. Harwood ..... Huntington
H. D. Hatfield ..... Huntington
C. M. Hawes ..... Huntington
Douglas Hayman ..... Huntington
J. S. Hayman ..... Huntington
L. S. Henley ..... Huntington
W. D. Hereford ..... Huntington
I. C. Hicks ..... Huntington
I. I. Hirschman ..... Huntington
F. C. Hodges ..... Huntington
C. A. Hoffman ..... Huntington
F. J. Hoitash ..... Huntington
J. E. Hubbard ..... Huntington
P. M. Huddleston ..... Huntington
E. J. Humphrey ..... Huntington
W. B. Hunter ..... Huntington
J. L. Hutchinson ..... Huntington
W. E. Irons ..... Huntington
G. D. Johnson ..... Spencer
A. S. Jones ..... Huntington
A. T. Jordan ..... Winfield
W. C. Kappes ..... Huntington
J. R. Kessee ..... Huntington
Dorsey Ketchum ..... Huntington
A. D. Kessler ..... Huntington
A. K. Kessler ..... Huntington
J. S. Klumpp ..... Huntington
H. V. Lusher ..... Huntington
G. M. Lyon ..... Huntington
A. R. MacKenzie ..... Huntington
F. O. Marple ..... Huntington
W. B. Martin ..... Huntington
G. O. McClellan ..... Hamlin
Hallock Moore ..... Huntington
L. J. Moore ..... Huntington
M. B. Moore ..... Huntington
T. W. Moore ..... Huntington
G. C. Morrison ..... Huntington
W. E. Neal ..... Huntington
W. J. Parsons ..... Huntington
Bruce Pollock ..... Pt. Pleasant
W. S. Porter ..... Wayne
K. C. Prichard ..... Huntington
G. A. Ratcliff ..... Huntington
E. F. Reaser ..... Huntington
C. O. Reynolds ..... Huntington
L. C. Richmond ..... Milton
J. W. Rife ..... Kenova
W. N. Rowley ..... Huntington
A. G. Rutherford ..... Huntington
F. X. Schuller ..... Huntington
F. A. Scott ..... Huntington
R. M. Sloan ..... Huntington
J. H. Steenbergen ..... Huntington
Roscoe Stotts ..... Kenova
W. W. Strange ..... Huntington
W. C. Swann ..... Huntington
C. T. Taylor ..... Huntington
Ewing Taylor ..... Huntington
I. W. Taylor ..... Huntington
R. S. Van Metre ..... Huntington
W. E. Vest ..... Huntington
G. W. Walden ..... West Hamlin
Stanley Weinstein ..... Huntington
R. J. Wilkinson ..... Huntington
C. A. Willis ..... Huntington
C. G. Willis ..... Huntington
C. B. Wright ..... Huntington
R. M. Wylie ..... Huntington

CENTRAL W. VA. SOCIETY

A. B. Bowyer ..... Buckhannon
A. W. Brazda ..... Richwood
E. S. Brown ..... Summersville
F. H. Brown ..... Summersville
G. O. Brown ..... Buckhannon
H. S. Brown ..... Sutton
J. D. Brown ..... Lost Creek
C. C. Carson ..... Gassaway
J. M. Cofer ..... Bergoo
R. G. Cutright ..... Buckhannon
L. W. Deeds ..... Buckhannon
J. B. Dodrill ..... Webster Springs
Hugh Dunn ..... Richwood
J. C. Eakle ..... Sutton
O. O. Eakle ..... Sutton
J. E. Echols ..... Richwood
W. E. Echols ..... Richwood
E. L. Fisher ..... Gassaway

G. E. Godman ..... Jerryville
W. H. Gum ..... Buckhannon
I. F. Hartman ..... Buckhannon
G. D. Hill ..... Tioga
L. O. Hill ..... Camden-on-Gauley
E. H. Hunter ..... Webster Springs
Henrietta Marquis ..... Richwood
J. N. Marquis ..... Richwood
James McClung ..... Richwood
W. E. McIlvain ..... Sutton
M. T. Morrison ..... Sutton
William Nelson ..... Richwood
B. L. Page ..... Buckhannon
L. W. Page ..... Buckhannon
J. A. Rusmisell ..... Buckhannon
J. W. Smith ..... Gassaway
H. O. Van Tromp ..... French Creek
*S. P. Allen ..... Webster Springs
*Fleming Howell ..... Buckhannon
*W. H. McCauley ..... Sutton
*J. L. Pifer ..... Buckhannon
*Everett Walker ..... Adrian

DODDRIDGE SOCIETY

A. Poole ..... West Union
E. T. Wetzel ..... West Union
R. S. White ..... West Union

EASTERN PANHANDLE SOCIETY

A. O. Albin ..... Charles Town
A. W. Armentrout ..... Martinsburg
E. H. Bitner ..... Martinsburg
R. E. Clapham ..... Martinsburg
A. B. Eagle ..... Martinsburg
M. R. Fox ..... Charles Town
V. L. Glover ..... Martinsburg
J. K. Guthrie ..... Martinsburg
W. L. Halton ..... Martinsburg
J. C. Helm ..... Hedgesville
N. B. Hendrix ..... Martinsburg
C. C. Johnson ..... Harpers Ferry
G. O. Martin ..... Martinsburg
Elizabeth McFetridge ..... Shepherdstown
W. J. Melvin ..... Darke
G. P. Morison ..... Charles Town
H. N. Moser ..... Shepherdstown
Max Oates ..... Martinsburg
T. K. Oates ..... Martinsburg
M. H. Porterfield ..... Martinsburg
C. G. Power ..... Martinsburg
Compton Riely ..... Martinsburg
R. K. Shirley ..... Hedgesville
R. B. Talbott ..... Martinsburg
C. A. Thomas ..... Martinsburg
H. G. Tonkin ..... Martinsburg
J. L. Van Metre ..... Charles Town
W. A. Wallace ..... Martinsburg
Halvard Wanger ..... Shepherdstown
Z. K. Waters ..... Martinsburg

FAYETTE COUNTY

O. D. Ballard ..... Elverton
A. E. Bays ..... Montgomery
Philip L. Becker ..... Kimberley
F. W. Bilger ..... Maybeury
W. P. Bittinger ..... Summerlee
B. F. Brugh ..... Montgomery
W. E. Bundy ..... Minden
N. L. Cardey ..... Winona
G. O. Crank ..... Lawton
Gilbert Daniel ..... Alloy
Guy Daugherty ..... Fayetteville
T. B. Daugherty ..... Fayetteville
W. B. Davis ..... Elkridge
L. A. Dickerson ..... Oak Hill
C. H. Engelfried ..... Montgomery
C. A. Fleger ..... Ansted
George Fordham ..... Powellton
Claude Frazier ..... Montgomery
Norman Friedman ..... Longacre
Geo. W. Grafton ..... Thurmond
L. R. Harless ..... Gauley Bridge
G. C. Hedrick, Jr. ..... Glen Ferris
G. G. Hodges ..... Kilsythe
Ralph Hogshead ..... Montgomery
L. I. Hoke ..... Nitro
A. L. Hunter ..... Pax
C. C. Jackson ..... East Rainelle
E. E. Jones, Jr. ..... Mount Hope
Harold Jones ..... Montgomery
R. D. Ketchum ..... Charleston
T. K. Laird ..... Montgomery
W. R. Laird ..... Montgomery
James P. Leary ..... McKendree
H. C. Martin ..... Rainelle
M. W. McGehee ..... Montgomery
C. G. Merriam ..... Beard's Fork
M. A. Moore ..... Longacre
N. G. Patterson ..... McKendree
R. S. Peck ..... Cannelton
J. T. Peters ..... Scarbro
Thos. B. Pope ..... Kingston
D. F. Predmore ..... Ansted
P. E. Prillaman ..... Scarbro
B. F. Puckett ..... Oak Hill
J. N. Reeves ..... Oak Hill
H. H. Ritter ..... Montgomery
J. L. Roark ..... Powellton
H. C. Skaggs ..... Montgomery
G. A. Smith ..... Montgomery
J. M. Spinks ..... Mount Hope
C. W. Stallard ..... Montgomery
E. B. Thompson ..... Montgomery
K. H. Trippett ..... Scarbro
H. F. Troutman ..... Page
R. A. Updike ..... Montgomery
J. F. Van Pelt ..... Oak Hill
C. E. Watkins ..... Harvey
*O. J. Henderson ..... Montgomery
*J. S. Shaffer ..... Montgomery
*D. W. Shirkey ..... Montgomery

GREENBRIER VALLEY SOCIETY

O. P. Argrabrite ..... Alderson
R. E. Baer ..... White Sulphur Springs
J. M. Brown ..... Alderson
R. C. Cecil ..... Rainelle
J. W. Compton ..... Ronceverte
J. R. Crawley ..... Anjean
J. H. Crouch ..... Lewisburg
A. D. Ferrell ..... Ronceverte
H. L. Goodman ..... Ronceverte
H. D. Gunning ..... Ronceverte
K. J. Hamrick ..... Marlinton
Guy Hinsdale ..... White Sulphur Springs
E. G. Kesler ..... Williamsburg
A. G. Lanham ..... Ronceverte
J. G. Leech ..... Quinwood
Allen E. LeHew ..... Lewisburg
C. W. Lemon ..... Lewisburg
C. F. Mahood ..... Alderson
T. G. Matney ..... Peterstown
E. W. McCauley ..... Rainelle
C. F. McClintic ..... Williamsburg
S. A. McFerrin ..... Renick
W. E. Myles ..... White Sulphur Springs
D. G. Preston ..... Lewisburg
N. R. Price ..... Marlinton
Edda Von Bose ..... Alderson
C. I. Wall ..... Rainelle
*J. W. De Vebre ..... Ronceverte
*H. L. Kirkpatrick ..... White Sulphur Springs

HANCOCK SOCIETY

G. L. Beaumont ..... New Cumberland
M. Bogarad ..... Weirton
E. M. Broen ..... New Cumberland
T. H. Bruce ..... New Cumberland
G. H. Davis ..... Weirton
J. E. Fisher ..... New Cumberland
Israel Levendorf ..... Weirton
A. E. McClue ..... Charleston
E. R. McNinch ..... Weirton
B. J. Moore ..... Chester
F. E. Polen ..... Hollidays Cove
M. H. Powers ..... Weirton
V. Prioletti ..... Weirton
J. E. Richmond ..... Weirton
George Rigas ..... Weirton
A. B. Rinehart ..... Weirton
L. O. Schwartz ..... Weirton
T. H. Slate ..... Hollidays Cove
A. C. Sunseri ..... Weirton
J. L. Thompson ..... Weirton
L. A. Whitaker ..... Weirton
Milton Wolpert ..... Chester
Anthony Yurko ..... Holliday's Cove

HARRISON COUNTY

W. H. Allman ..... Clarksburg
B. S. Brake ..... Clarksburg
J. T. Brennan ..... Clarksburg
F. C. Chandler ..... Bridgeport
R. S. Coffindaffer ..... Shinnston
I. D. Cole ..... Clarksburg
D. P. Cruikshank ..... Lumberport
Edward Davis ..... Salem
W. M. Davis ..... Bridgeport
H. H. Esker ..... Clarksburg
G. F. Evans ..... Clarksburg
Marcus E. Ferrell ..... Clarksburg
C. F. Fisher ..... Clarksburg
Earl N. Flowers ..... Clarksburg
F. G. Genin ..... Clarksburg
Thomas Gocke ..... Clarksburg
W. T. Gocke ..... Clarksburg
H. H. Golz ..... Clarksburg
Sylvia Grant ..... Bridgeport
C. C. Greer ..... Clarksburg
S. S. Hall ..... Clarksburg
T. G. Harris ..... West Milford
H. H. Haynes ..... Clarksburg
Ben E. Hodge ..... Clarksburg
R. C. Hood ..... Washington, D. C.
B. I. Hudkins ..... Wolf Summit
R. T. Humphries ..... Clarksburg
Kenna Jackson ..... Clarksburg
C. C. Jarvis ..... Clarksburg
A. O. Kelley ..... Wallace
A. J. Kemper ..... Lost Creek
O. W. Ladwig ..... Wilsonburg
F. V. Langfitt ..... Clarksburg
R. B. Linger ..... Clarksburg
R. V. Lynch ..... Meadowbrook
J. S. Maloy ..... Shinnston
J. P. McGuire ..... Clarksburg
L. H. Mills ..... Clarksburg
L. E. Neal ..... Clarksburg
R. B. Nutter ..... Enterprise
R. B. Nutter, Jr. ..... Lumberport
R. J. Nutter ..... Clarksburg
C. R. Ogden ..... Clarksburg

R. L. Osborn ..... Clarksburg
W. T. Owens ..... Clarksburg
J. E. Page ..... Clarksburg
C. L. Pearcy ..... Salem
E. Pendleton ..... Clarksburg
A. T. Post ..... Clarksburg
C. O. Post ..... Clarksburg
S. H. Post ..... Volga
James Ralston ..... Clarksburg
James Repass ..... Lumberport
Wm. Riheldaffer ..... Romney
R. M. Riley ..... Nutter Fort
C. N. Slater ..... Clarksburg
H. E. Sloan ..... Clarksburg
W. W. Spelsburg ..... Clarksburg
L. O. Spencer ..... Shinnston
J. E. Stephenson ..... Clarksburg
W. L. Strother ..... Salem
H. V. Thomas ..... Clarksburg
E. D. Tucker ..... Nutter Fort
E. F. Wehner ..... Clarksburg
H. A. Whisler ..... Clarksburg
B. W. Wilkinson ..... Clarksburg
J. F. Williams ..... Clarksburg
J. F. Williams, Jr. ..... Clarksburg
J. E. Wilson ..... Clarksburg
L. S. Wornal ..... Shinnston
E. B. Wright ..... Clarksburg
*A. O. Flowers ..... Clarksburg
*E. Newton Flowers ..... Clarksburg
*John Folk ..... Bridgeport
*E. A. Hill ..... Clarksburg
*T. M. Hood ..... Clarksburg

KANAWHA SOCIETY

M. Albrecht ..... Charleston
A. E. Amick ..... Charleston
A. L. Amick ..... Charleston
Maury Anderson ..... Dunbar
R. L. Anderson ..... Charleston
H. W. Angell ..... Charleston
H. A. Bailey ..... Charleston
H. E. Baldock ..... Charleston
J. Bankhead Banks ..... Charleston
D. N. Barber ..... Charleston
T. M. Barber ..... Charleston
Jack Basman ..... Charleston
H. M. Beddow ..... Charleston
S. L. Bivens ..... Charleston
W. P. Black ..... Charleston
T. H. Blake ..... St. Albans
O. H. Bobbitt ..... Charleston
Julius Boiarsky ..... Charleston
M. L. Bonar ..... Charleston
Bert Bradford, Jr. ..... Charleston
A. S. Brady, Jr. ..... Charleston
John P. Brick ..... Charleston
H. M. Brown ..... Charleston
R. J. Brown ..... Charleston
Rex A. Burdette ..... Charleston
I. E. Buff ..... Charleston
R. K. Buford ..... Charleston
J. F. Cadden ..... Charleston
J. E. Cannaday ..... Charleston
G. B. Capito ..... Charleston
F. B. Carlson ..... Charleston
T. J. Casto ..... Charleston
T. E. Cato ..... Charleston
Preston Champe ..... Charleston
V. T. Churchman ..... Charleston
V. T. Churchman, Jr. ..... Charleston
F. A. Clark ..... Charleston
W. L. Cooke ..... Charleston
E. A. Davis ..... Charleston
D. A. Dent ..... Charleston
M. S. Duling ..... Charleston
J. L. Dunlap ..... Bancroft
R. H. Dunn ..... South Charleston
F. L. Erwin ..... Burnwell
H. H. Fisher ..... Dunbar
C. M. Fleshman ..... Clendenin
R. I. Frame ..... Sharples
J. W. Frazier ..... Charleston
A. J. Given ..... Rensford
H. R. Glass ..... Charleston
W. J. Glass ..... Sissonville
Dan Glassman ..... Charleston
J. R. Godbey ..... Charleston
A. T. Gordon ..... Spencer
P. L. Gordon ..... Charleston
Fred Gott ..... Charleston
G. F. Grisinger ..... Charleston
John B. Haley ..... Charleston
P. A. Haley, II ..... Charleston
R. O. Halloran ..... Charleston
R. E. Hamrick ..... Charleston
R. S. Hamrick ..... St. Albans
J. H. Hansford ..... Pratt
O. M. Harper ..... Clendenin
E. R. Hays ..... Chelyan
E. B. Henson ..... Charleston
W. E. Hoffman ..... Charleston
V. E. Holcombe ..... Charleston
H. H. Howell ..... Madison
A. P. Hudgins ..... Charleston
W. R. Hughey ..... Charleston
J. Ross Hunter ..... Charleston
T. H. Hutchinson ..... Malden
R. A. Ireland ..... Charleston
G. G. Irwin ..... Charleston
L. A. Jarrett ..... Dunbar
E. V. Jordan ..... Charleston
C. R. Kessel ..... Ripley
Ray Kessel ..... Charleston
Russel Kessel ..... Charleston
H. D. Law ..... Charleston
J. P. Lilly ..... Charleston
A. C. Litton ..... Charleston
E. A. Litzinger ..... Charleston
R. R. Louft ..... Charleston
V. E. Mace ..... Charleston
C. B. Marshall ..... Nitro
U. G. McClure ..... Charleston
Ralph McLaughlin ..... Charleston
W. A. McMillan ..... Charleston
W. O. McMillan ..... Charleston
H. D. McPherson ..... Eskdale
M. I. Mendeloff ..... Charleston
H. W. Merideth ..... Carbon
A. W. Milhoan ..... Nitro
J. W. Moore ..... Charleston
O. N. Morison ..... Charleston
L. H. Mynes ..... Charleston
T. W. Nale ..... Charleston
G. P. Naum ..... Ward
N. H. Newhouse ..... Charleston
E. W. Owen ..... Spencer
R. E. Pence ..... South Charleston
M. F. Peterson ..... Charleston
V. L. Peterson ..... Charleston
S. H. Phillips ..... Charleston
W. W. Point ..... Charleston
W. C. Polsue ..... Charleston
Phillip Preiser ..... Charleston
A. M. Price ..... Charleston
R. B. Price ..... Charleston
W. J. G. Putschar ..... Charleston
C. A. Ray ..... Charleston
Roy Ray ..... South Charleston
T. G. Reed ..... Charleston
F. H. Reeder ..... Charleston
F. C. Reel ..... Charleston
P. H. Revercomb ..... Charleston
H. A. Rich ..... Charleston
G. A. Rigrish ..... Charleston
G. C. Robertson ..... Charleston
H. L. Robertson ..... Charleston
W. S. Robertson ..... Charleston
J. H. Robinson ..... Charleston
J. U. Rohr ..... Charleston
J. E. Rucker ..... Charleston
G. C. Schoolfield ..... Charleston
C. N. Scott ..... Charleston
Abraham Seletz ..... Charleston
J. H. Selman ..... Charleston
Earl Shamblen ..... Charleston
A. A. Shawkey ..... Charleston
W. S. Shepherd ..... Charleston
W. F. Shirkey ..... Charleston
J. S. Skaggs ..... Montcoal
J. W. Skaggs ..... Nitro
A. A. Smith ..... Clay
B. A. Smith ..... Spencer
C. B. Smith ..... Charleston
J. A. Smith ..... South Charleston
S. B. Souleyret ..... Coalburg
Charles Staats ..... Charleston
H. H. Staats ..... Charleston
W. C. Stewart ..... Charleston
H. A. Swart ..... Charleston
B. H. Swint ..... Charleston
H. G. Thompson ..... Charleston
W. A. Thornhill, Jr. ..... Charleston
P. A. Tuckwiller ..... Charleston
E. O. Vaughan ..... St. Albans
R. H. Walker ..... Charleston
C. N. Watts ..... Charleston
R. L. Webb ..... Charleston
F. P. Weltner ..... Charleston
C. T. Whiteside ..... Kayford
W. V. Wilkerson ..... Prenter
J. O. Williams ..... St. Albans
A. A. Wilson ..... Charleston
W. B. Wilson ..... Charleston
H. B. Wise ..... Charleston
R. E. Woodall ..... Charleston
W. F. Work ..... Charleston
*O. L. Aultz ..... Charleston
*E. H. Campbell ..... Alderson
*C. E. Copeland ..... Charleston
*B. S. Preston ..... Charleston
*W. B. Robertson ..... Belle
*W. H. Wilson ..... St. Albans

LEWIS COUNTY

H. M. Andrew ..... Weston
S. H. Burton ..... Weston
H. R. Coleman ..... Weston
E. R. Cooper ..... Glenville
G. C. Corder ..... Jane Lew
M. D. Cure, Jr. ..... Weston
C. R. Davisson ..... Weston
R. M. Fisher ..... Weston
O. L. Hudkins ..... Weston
W. P. King ..... Weston
A. F. Lawson ..... Weston
J. A. Markley ..... Weston
J. E. Offner ..... Weston
Robert O. Pletcher ..... Jane Lew
C. B. Rohr ..... Alum Bridge
Theresa Snaith ..... Weston
George Snyder ..... Weston
Guy Stalnaker ..... Glenville
E. A. Trinkie ..... Weston
*E. T. W. Hall ..... Weston

LOGAN SOCIETY

A. E. Altizer ..... Accoville
F. E. Brammer ..... Dehue
W. E. Brewer ..... Logan
J. W. Carney ..... Logan
Arthur Davidman ..... Logan
C. A. Davis ..... Logan
V. A. Deason ..... Logan
H. H. Farley ..... Logan
J. T. Ferrell ..... Chapmansville
A. M. French ..... Logan
W. S. Gilmer ..... Henlawson
Joseph L. Green ..... Logan
R. C. Haislip ..... Henlawson
W. P. Hamilton ..... Logan
D. S. Hess ..... Logan
I. M. Kruger ..... Logan
V. L. Lance ..... Logan
L. H. Layman ..... Holden
U. C. Lovejoy ..... Omar
J. W. Lyons ..... Holden
W. E. Matthews ..... Logan
W. T. McClellan ..... Ethel
D. T. Moore ..... Stirrat
J. F. Morris ..... Holden
W. H. Parker ..... Braeholm
J. L. Patterson ..... Holden
Owen Poling ..... Mallory
R. W. Quaintance ..... Lundale
R. W. Roberts ..... Man
W. S. Rowan ..... Logan
B. D. Smith ..... Omar
T. C. Smith ..... Slagle
E. H. Starcher ..... Earling
L. E. Steele ..... Logan
J. A. Stumbo ..... Logan
J. W. Thornbury ..... Man
James H. Thornbury ..... Logan
J. B. Traul ..... Lorado
R. E. Traul ..... Whitman
Harold Vanhoose ..... Mallory
R. R. Vaughn ..... McBeth
J. W. Yost ..... Holden
*L. L. Aultz ..... Omar
*J. O. Hill ..... Huntington
*S. B. Lawson ..... Logan
*F. L. Round ..... Holden

MARION SOCIETY

L. E. Baron ..... Mannington
J. M. Barr ..... Worthington
J. L. Blanton ..... Fairmont
C. J. Carter ..... Fairmont
H. D. Causey ..... Fairmont
J. B. Clinton ..... Fairmont
J. C. Collins ..... Fairmont
H. L. Criss ..... Fairmont
J. W. Davis ..... Fairmont
Geo. T. Evans ..... Fairmont
H. C. Fleming ..... Fairmont
C. T. Francis ..... Fairmont
R. R. Frye ..... Mannington
J. P. Helmick ..... Fairmont
C. L. Holland ..... Fairmont
E. A. Holland ..... Fairmont
L. D. Howard ..... Fairmont
J. J. Jenkins ..... Farmington
Phillip Johnson ..... Fairmont
H. S. Keister ..... Fairmont
C. L. Kinney ..... Ida May
L. R. Lambert ..... Fairmont
C. S. Lawson ..... Fairmont
W. J. Leahy ..... Mannington
J. T. Mallamo ..... Fairmont
J. S. Maxwell ..... Fairmont
G. R. Miller ..... Fairview
P. G. Moore ..... Mannington
G. V. Morgan ..... Fairmont
E. K. Munn ..... Watson
L. D. Norris ..... Fairmont
W. W. Orr ..... Rachel
C. L. Parks ..... Fairmont
P. F. Prioleau ..... Fairmont
B. B. Rader ..... Monongah
C. M. Ramage ..... Fairmont
F. B. Rogers ..... Fairmont
J. D. Romino ..... Fairmont
F. F. Sowers ..... Fairmont
Joseph M. Strong ..... Monongah
A. L. Shinn ..... Fairmont
K. Y. Swisher ..... Fairview
J. M. Trach ..... Fairmont
J. P. Trach ..... Fairmont
G. H. Traugh ..... Fairmont
J. R. Tuckwiller ..... Fairmont
C. W. Waddell ..... Fairmont
Clyde Watson ..... Jordan
W. A. Welton ..... Fairmont
E. D. Wise ..... Everettsville
Joe Yost ..... Fairmont
Paul Yost ..... Fairmont
*G. H. Brownfield ..... Fairmont
*C. O. Henry ..... Fairmont
*H. R. Johnson ..... Fairmont

MARSHALL SOCIETY

Harold Ashworth ..... Moundsville
R. A. Ashworth ..... Moundsville
D. S. Bensen ..... Moundsville
Wm. P. Bradford ..... Moundsville
W. C. Boggs ..... Cameron
B. F. Bone ..... Moundsville
O. F. Covert ..... Moundsville
D. B. Ealy ..... Moundsville
W. G. C. Hill ..... Moundsville
J. H. Luikart ..... Moundsville
L. H. McCuskey ..... Moundsville
C. G. Morgan ..... Moundsville
H. S. Parker ..... McMechen
J. C. Peck ..... Moundsville
J. A. Striebich ..... Moundsville
O. P. Wilson ..... Moundsville
*M. A. Dowler ..... Glendale
*M. J. Fortney ..... Hundred

MASON SOCIETY

H. A. Barbee ..... Pt. Pleasant
R. F. Bryant ..... New Haven
M. Koenigsburg ..... Pt. Pleasant
J. M. Fadely ..... Pt. Pleasant
E. L. McElfresh ..... Pt. Pleasant
C. W. Petty ..... Hartford
Max Raine ..... Pt. Pleasant
Jerome Toupkin ..... Pt. Pleasant

McDOWELL SOCIETY

J. H. Anderson ..... Hemphill
J. B. Bailey ..... Davy
A. A. Baldwin ..... Coalwood
J. A. Bennett ..... Algoma
A. H. Bracey ..... Welch
H. A. Bracey ..... Welch
R. K. Bragonier ..... Keystone
C. I. Butte, Jr. ..... Jenkinjones
H. G. Camper ..... Welch
A. B. Carr ..... War
E. T. Cecil ..... Berwind
C. B. Chapman ..... Welch
R. D. Clark ..... Caretta
C. C. Cochrane ..... Kimball
R. N. Cooley ..... Coalwood
J. K. Cooper ..... Premier
N. F. Coulon ..... Gary
L. R. Dudney ..... Welch
L. E. Dunman ..... Gary
N. H. Dyer ..... Bartley
R. H. Edwards ..... Welch
Boyce Elliott ..... Hemphill
G. P. Evans ..... Iaeger
H. P. Evans ..... Keystone
R. H. Fowlkes ..... Welch
Edmond Gates ..... Welch
R. A. Gettlefinger ..... Kimball
F. H. Goodwin ..... Welch
W. C. Hall ..... Welch
J. C. Harrison ..... Bradshaw
D. D. Hatfield ..... Yukon
C. R. Hughes ..... Kimball
J. C. Hutchinson ..... Welch
C. F. Jackson ..... Raysal
C. F. Johnston ..... Welch
W. L. Johnston ..... McDowell
Thornton Kell ..... Caretta
J. C. Killey ..... Vivian
F. E. La Prade ..... Welch
E. E. Lovas ..... Berwind
J. L. McCarty ..... Berwind
J. H. Murray ..... Jenkinjones
Sid Odell ..... Switchback
I. T. Peters ..... Maybeury
Albert Repass ..... Clarksburg
D. G. Rivers ..... Gilliam
H. T. Schiefelbein ..... Welch
R. V. Shanklin ..... Gary
M. W. Smith ..... Keystone
A. B. Spahr ..... Newhall
P. C. Spangler ..... Pageton
G. L. Straub ..... Welch
M. F. Torregrossa ..... Ashland
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*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, Vol. 23, No. 2, pages 201-206, March, 1939.

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Woman's Auxiliary

WHAT CAN AN AUXILIARY DO?

The question often raised in organization work "What can an Auxiliary do?" was the impetus for reading more carefully the section devoted to the Woman's Auxiliary in the *Journal of the American Medical Association* to learn what Auxiliary members are doing in both state and county organizations. Let me answer in part the question raised by summing up some of the numerous activities in which doctors' wives have been and are engaged.

An Auxiliary to the Fulton County Medical Society of Georgia raised funds for the treatment of patients for infantile paralysis. The Auxiliary to the Jefferson County Medical Society of Kentucky last year raised funds for the Children's Free Hospital at Christmas time and distributed free gifts to patients in the City Hospital. This same Auxiliary raised $119.00 at one party for its benevolent fund, which it has established for widows and orphans of former members of the Jefferson County Medical Society, and also sponsored a motion picture raising $25.00 for the benefit of the sewing units of the Auxiliary. The Auxiliary to the Pittsburg County Medical Society of Oklahoma last year prepared Christmas baskets and contributed cod liver oil to families in need of this remedy. This Auxiliary also presented a copy of *The Horse and Buggy Doctor* to the public library. The Garfield Auxiliary of Oklahoma helped underprivileged children. The Auxiliary to the Oklahoma City Medical Association makes scrapbooks and furnishes clothing for the State Hospital for Crippled Children. The Auxiliary to the North Idaho Medical Association is preparing a history of the medical men who were pioneers of the region and a collection of old instruments and other equipment used by them. Auxiliaries in other states including Utah and West Virginia are working on similar projects.

The Auxiliary to the Kootenai County Medical Association of Idaho made garments for infants and distributed them through the county health unit. The Auxiliary to the Dane County Medical Society of Wisconsin donated $10.00 to the Chinese Aid Council for nursing and medical supplies. The Battle Creek Auxiliary of Michigan provided maternity kits for about five hundred indigent mothers

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and is now furnishing a room in the new community hospital. The Kalamazoo Auxiliary of Michigan has provided a Fairchild hearing aid for the use of children in the hard-of-hearing department of public schools. The Auxiliary has also assisted the Grand Rapids Medical Society in providing a benevolent fund to be used for members and their dependents in distress. The Auxiliary to the Calhoun County Medical Society of Michigan donated seven wheel chairs to the new community hospital. The Auxiliary to the Bureau County Society of Illinois donated $50.00 to the Crippled Children's Clinic. The Auxiliary to the Denver Medical Society in Colorado raised $465.00 at its annual theatre party for the work of the Auxiliary. The Auxiliary to the Norfolk County Medical Society of Virginia raised $377.39 from three entertainments. The proceeds were given to a patient at the Tidewater Memorial Hospital and used for other philanthropic work.

The Auxiliary to the Petersburg Medical Society of Virginia gave a linen shower for the community hospital and is supporting a memorial bed at the Blue Ridge Sanatorium. The Taylor - Jones Counties' Auxiliary of Texas is providing one

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month's maintenance for a needy student at the Texas State College for Women. The Multomah County Auxiliary of Oregon made eleven loans in 1938 to students in the junior and senior years at the University of Oregon Medical School. The members of this Auxiliary knitted and purchased four dozen sun suits for the children at the Albertina Kerr Nursery. In September the Auxiliary presented its first hobby show for the doctors. Seventy-four exhibits were contributed by the doctors. The Coos-Curry Counties' Woman's Auxiliary of Oregon has adopted for its project the providing of entertainment for the inmates of the county farm. The Klamath-Lake County Auxiliary of Oregon has provided canned fruit and jelly for the WPA nursery school; its members have been making bibs and botties for the Doernbercher Memorial Hospital for Children.

The Jackson County Auxiliary of Oregon undertook as one of its projects the furnishing of oxygen to patients who cannot afford it. The Auxiliary to the Washington State Medical Association cooperated with the state medical association in sponsoring "Your Health Exposition" held in Seattle in September, 1939. The Jackson County Medical Society of Missouri held an endowment tea for the benefit of the Jackson County Medical Society library. The Auxiliary to the Dade County Medical Association of Florida is assisting the medical society in the purchase of books and furnishings for the James M. Jackson Memorial Hospital. Through the efforts of the Auxiliary to the Labette County Medical Society of Kansas, announcement of the American Medican Association radio programs is being regularly published in the *Parsons Sun*. The Caddo Parish Auxiliary of Louisiana is sponsoring the education of children in the Pines Preventorium for the tuberculous, and the raising of a fund to aid indigent physicians. The Auxiliary to the Medical Society of the County of Kings in New York held its first annual health institute October 11. Dr. Van Etten in his address to the West Virginia Auxiliary at White Sulphur Springs commended the work of a New York Auxiliary. The Auxiliary to which he referred replaced in one of the New York hospitals the heavy unattractive serving dishes with dainty cheerful ones. The Auxiliary to the Mississippi State Medical Society has been absorbed in the project of raising $5,000.00 to finance the purchase of certain needs of the state preventorium for the care of children.

In this resume of activities there has been an

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attempt to give an account of specific different activities. Other projects which have been stressed in general by the Auxiliaries are: The placing of copies of *Hygeia* in beauty parlors, barber shops, public libraries, clubs, and public schools (some county Auxiliaries have placed them in every school of the county); the sponsoring of state and county health essay contests; contributions to many funds and especially in the south to the Jane Todd Crawford fund; cooperation with the American Society for the Control of Cancer; the widening of public relations by bringing about pleasant and instructive contacts with other organizations; and programs for self-instruction of Auxiliary members as well as the laity on problems of health, socialized medicine, and the like.

To further the work of health education the Woman's Auxiliary has compiled study programs which have been approved by the Advisory Committee of the American Medical Association. These may be obtained in limited numbers. The state chairman of programs also has many valuable suggestions. Our own West Virginia Auxiliary, under the alert guidance of Mrs. Holcombe, and our county auxiliaries are doing very commendable pieces of work. With all these projects for reference and all the suggestions that are available, and room always for originality, surely there are any number of worthwhile objectives for the Auxiliary, large or small, to undertake. Of course, with the widening of women's interests there are many organizations to which one may belong; but let us remember there is no organization through which we, as doctor's wives, can express so adequately our appreciation of the medical profession and our interest in its objectives.—Mrs. Scott A. Ford.

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CABELL COUNTY

The Woman's Auxiliary to the Cabell County Medical Society held their November meeting on the 13th at the Governor Cabell Hotel, Huntington. Mrs. Edwin J. Humphrey, president, presided. Thirty-two members attended.

Dr. Arthur E. McClue, state health commissioner, Charleston, spoke on "The Social Security Act and Its Relation to the West Virginia Worker." Dr. Raymond Sloan, Huntington, spoke on "City Clinics."

This was an open meeting, and the following organizations were represented: Woman's Club, P. T. A., Community Chest, Junior League, Boy Scouts and Girl Scouts, Y. W. C. A., Y. M. C. A., Kiwanis Day Nursery, Social Agencies, Junior Woman's Club, Catholic Daughters of America, and workers in City's Charity Clinics.

The next meeting will be held December 9 at the Guyan Country Club. It will be a dinner dance for the Cabell County Medical Society and the Auxiliary.

MRS. DORSEY KETCHUM, *Secretary.*

FAYETTE COUNTY

The Woman's Auxiliary to the Fayette County Medical Society met on October 19th at the Faymont Hotel, Montgomery. Mrs. R. A. Updike, president, presided and eight members were present. Mrs. H. F. Troutman, Page, addressed the group on "Socialized Medicine," from an article in *Goodhousekeeping* magazine.

The November meeting of the Fayette County Auxiliary was held on the 21st at the home of Mrs. R. A. Updike, Montgomery. Ten members attended the meeting, which was a social gathering.

MRS. W. B. DAVIS, *Secretary.*

LOGAN COUNTY

The Woman's Auxiliary to the Logan County Medical Society met on December 5, for their regular monthly meeting, at the home of Mrs. L. E. Steele. Mrs. Steele and Mrs. W. S. Gilmer were the hostesses.

This was a business meeting and the group talked of placing *Hygeia* in the schools of Logan county this year.

Dr. W. P. Hamilton, Logan county health officer, spoke to the Auxiliary on "Periodic Health Examinations." There were 17 members present.

MRS. J. W. CARNEY, *Secretary.*

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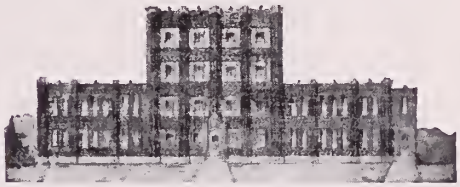

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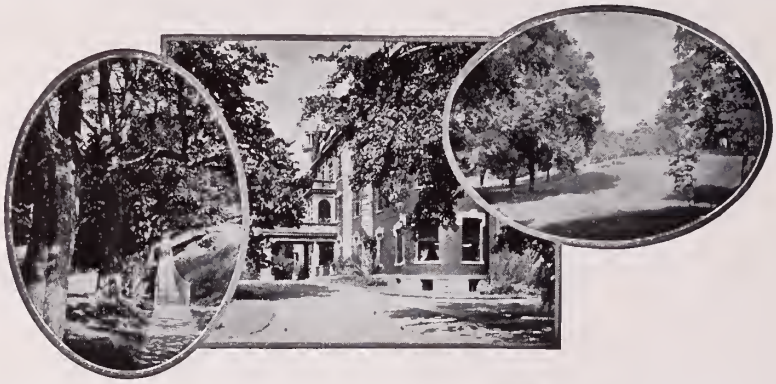

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MARION COUNTY

The Woman's Auxiliary to the Marion County Medical Society held their October meeting on the 31st at the Fairmont Hotel. Mrs. J. R. Tuckwiller, president, called the meeting to order. Twenty-two members were present and heard Mrs. V. E. Holcombe, state president, speak on the work of State and National Auxiliaries.

The November 28 meeting of the Marion County Auxiliary was held at the home of Mrs. George H. Traugh, Fairmont. Mrs. J. R. Tuckwiller, president, presided and thirty members were present.

The Auxiliary celebrated their tenth anniversary with a dinner party. After dinner entertainment consisted of a skit, written by one of the members, depicting events in each year of the existence of the Auxiliary.

The next meeting will be held at the Fairmont Hotel, January 30, 1940.

MRS. NORMA H. DAVIS, *Secretary*.

PARKERSBURG

The Woman's Auxiliary to the Parkersburg Academy of Medicine met at the Chancellor Hotel, Parkersburg, on December 12. The president, Mrs. Welch England, Parkersburg, presided over the meeting and thirty members were present. Miss Esther Finley, M. A., R. N., spoke on "What the Red Cross Means to Our Community."

Donations were accepted for Christmas presents for the poor.

MRS. ARCHBOLD JONES, *Secretary*.

HARRISON COUNTY

The Woman's Auxiliary to the Harrison County Medical Society held their December meeting on the seventh at the Hotel Gore, Clarksburg. Mrs. H. H. Esker, president, called the meeting to order and thirty members were present.

Adjutant Morris of the Clarksburg branch of the Salvation Army, and Mrs. Walraven of Charleston, addressed the group on "The Crippled Child."

Mrs. Corinne Bunn spoke on "Maternal Health."

The next meeting of the Auxiliary will be held at the same place in January.

MRS. LAURA C. FISHER, *Secretary*.

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MRS. WALKER APPOINTED

Mrs. Rome H. Walker, Charleston, was recently appointed West Virginia councillor for the Southern Medical Association Auxiliary.

Mrs. Harry V. Thomas, Clarksburg, was elected secretary of the Southern Medical Association Auxiliary at the Memphis meeting in November.

BOOK REVIEWS

A. M. A. VOLUME ON FOODS

Accepted Foods, and Their Nutritional Significance, a publication of the Council on Foods of the American Medical Association. Cloth, price $2.00 postpaid. Pp. 512; Chicago: American Medical Association, 1939.

Accepted Foods, and Their Nutritional Significance contains descriptions and detailed information regarding the chemical composition of more than 3,800 accepted products, together with a discussion of the nutritional significance of each class of foods.

This book will be a welcome reference book for all persons interested in securing authoritative information about foods, especially the processed and fabricated foods which are widely advertised. The accepted products are classified in various categories: fats and oils, fruit juices including tomato juice, canned and dried fruit products, grain products, preparations used in the feeding of infants, meats, fish and sea foods, milk and milk products other than butter, foods for special dietetic purposes, sugars and syrups, vegetables and mushrooms, and unclassified and miscellaneous foods, including gelatin, iodized salt, coffee, tea, chocolate, cocoa, chocolate flavored beverage bases, flavoring extracts, dessert products, baking powder, cream of tartar, baking soda, cottonseed flour.

MOUNT REGIS CLOSES

Dr. Everett E. Watson, director, has announced the closing of Mount Regis Sanatorium at Salem, Virginia. Mount Regis has long been well known to West Virginia physicians and patients as a splendid institution for treatment of tuberculosis and other diseases of the chest. The sanatorium has been a JOURNAL advertiser for more than ten years.

Dr. Watson has advised that he would continue to live at the sanatorium and would devote his full time to consultation by appointment. He plans to maintain his offices in the building and give gas and look after out-patients as he has in the past.

Directory of Physicians in Limited Practice

Advertising space in the directory of physicians in limited practice can be had by communicating with Mr. Joe W. Savage, Secretary-Manager of the West Virginia Medical Journal, Box 787, Charleston, W. Va. The cost is one dollar per month. Space may be had only by members of the West Virginia State Medical Association.

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Vol. XXXVI February, 1940 No. 2

OCCLUSIVE PERIPHERAL VASCULAR EMERGENCIES*

By EMIL J. C. HILDENBRAND, M. D.
Washington, D. C.

Even though the essential pathology as well as the etiology of the occlusive peripheral vascular emergencies are different, the conservative treatment of these conditions is similar. Applicable in each of the disorders are the same methods especially those which attempt to improve the impaired circulation.

Even though involvement of the veins may occur in conjunction with arterial disease and the veins are characteristically involved in thromboangiitis obliterans, the therapy of vein thrombosis differs from that of artery thrombosis sufficiently to require separate discussion.

By occlusive peripheral vascular emergencies we mean arterial embolism, arterial thrombosis and venous thrombosis. As such, immediate steps must be instituted if the saving of limb or life are to be given the best opportunity. In general practice the emergencies are first seen in the greater percentage of cases. Recognition and simple measures may be deciding factors in the ultimate outcome.[1]

THE AUTHOR

Dr. Hildenbrand, surgeon; graduate University of Maryland School of Medicine, 1930.

The effects of complete arrest of blood flow have been observed closely in normal subjects, in whom the circulation to a limb has been stopped by inflating a cuff encircling its base to a point exceeding systolic blood pressure. These studies greatly facilitate a proper understanding of relevant pathological conditions.

The instant the blood flow ceases the surface temperature of the limb begins to fall. The rate of fall depends on the difference between the temperature of the skin and the surrounding air, upon movement of the air, humidity, and other factors. In ordinary circumstances the fall is not rapid; thus more than a half-hour will elapse before fingers cool down from a state of ordinary warmth to room temperature. The temperature some-

*Read before the Eastern Panhandle Medical Society, Martinsburg, W. Va., September 13, 1939.

times falls a degree or two below room temperature owing to evaporation. The rest of the hand cools far less quickly because its surface is smaller relative to its bulk. The cooling of the arm is for similar reasons slower still; hours elapse before its surface temperature reaches that of the surrounding air of a still room. A limb does not become "icy" cold, neither can it became cold "suddenly" through simple arrest of its circulation; such terms are frequently used in current descriptions, but they are inaccurate and often seriously misleading.

Within a few seconds of circulatory arrest it is usual to detect a slight but distinct paling of the skin, appearing gradually as blood drains out of minute vessels into the veins. As may be observed microscopically in capillaries of the fingernail bed, this onward flow lasts from one-half to one minute after the flow of blood into the arm has been arrested completely. The change in color is greatest in a limb that is raised and least in one that is dependent. During the next few minutes the tint of the skin is noticed to become bluer. The change is more noticeable in parts of the skin that are originally high colored, in the hand rather than in the arm; but the change is in fact universal. A fully cyanotic tint will develop within two or three minutes if the arm is very warm; it will develop much more slowly if the arm is cold. At the end of three or five minutes when cyanosis is usually nearly full, the depth of the vascular coloration is found to be increasing a little, for the minute vessels are now beginning to dilate in response to local accumulation of vasodilator metabolities.

Shortly after the circulation to a limb has been arrested its nerves, being ischemic, gradually lose their function, resulting in sensory and motor paralysis. Different forms of sensation are lost at different rates, and the paralysis displays a characteristic march from the tip to the base of the limb. Paralysis of the fingers or toes occurs the more quickly, the warmer the limb, and the nearer to the trunk the circulation is arrested.

When the period of ischemia is prolonged to periods of hours the nutrition of the tissues may be affected permanently. The several tissues concerned are unequally susceptible to prolonged loss of blood supply; the relative susceptibilities of nerve and muscle are of particular interest. The nerves of the limbs lose their function under ischemic conditions long before muscle becomes inexcitable; but long-continued ischemia kills muscle more readily than it kills nerve. Ischemia of the skin for periods of about six or twelve hours causes subsequent whealing; these or rather longer periods result in blistering; while loss of blood supply for 24 to 48 hours continuously, or for frequent shorter periods, results in necrosis of the skin.[2]

ARTERIAL EMBOLISM

Embolism in the arteries of the extremities with subsequent thrombosis from a surgical standpoint is a grave problem. Surgical success depends largely on immediate recognition and immediate removal of the embolus. Early recognition falls to the family physician, who sees the patient at home, or more frequently the medical staff of the hospital, who see the condition suddenly appear in some patient whom they are treating for a cardiovascular disease.

Etiology: There is in all cases an almost constant triad of factors.[3]

1. Heart disease: Usually chronic valvular disease.
2. Arterial Disease: Arteriosclerosis, endarteritis.
3. Insult:
   a. Auricular fibrillation.
   b. Acute infections.
   c. Surgical operations.
   d. Diabetes.

Symptomatology: 1. Pain: Sudden and agonizing along the course of an artery or in an extremity is the most important symptom in a case with the embolism triad.

2. Tenderness: Exquisite over the affected extremity, below the embolus, with the maximum point of tenderness over the spot where the embolus is lodged. This maximum point

of tenderness is the one most important sign for locating the embolus.

3. Color: Color of the affected extremity immediately after the pain is marble white. This lasts for several hours and then a duskiness suffuses through the extremity.

4. Temperature: In the extremity the temperature is several degrees lower than in the unaffected side.

5. Pulse: This is absent below the embolus and usually in the artery above the embolus, due to vasospasm. The blood pressure is absent. Oscillometric readings are negative in the affected extremity.

6. Function: This is immediately lost in the extremity and only returns with return of circulation.

7. Sensations: Immediately diminished but return with circulation except for areas affected by long periods of diminished blood supply.

TREATMENT

The extraction of the clot is still the optimal method of treatment. In order to define the indications for an embolectomy, it is well to examine the factors which determine the ultimate fate of a limb affected by acute arterial occlusion. They may be readily grouped under four headings: (1) the condition of the heart, (2) the condition of the vessel wall at the site of obstruction, (3) the condition of the collateral vascular bed and (4) the time elapsed between the early symptoms and effective treatment. Of these four factors, the condition of the heart and of the vessel wall cannot be influenced. There is in fact a danger of aggravating circulation by overanxious digitalization. One can, however, influence the time factor and the state of the collateral vascular bed. It might be well to state what can be accomplished when the patient is seen in the first ten hours. First, one must make an attempt to differentiate between embolism and thrombosis, keeping in mind the possibility of venous thrombosis with arterial spasm, which will be discussed a little later. Then one must try to localize the site of occlusion and determine, on the basis of the patient's age, cardiovascular status and the available collateral bed, whether or not gangrene is to be expected. Gangrene seldom follows an embolus to the upper extremity, and while embolectomies on the upper extremity are uniformly successful, they are unnecessary, for one can get along without them.

Intensive conservative measures must be adopted to open up the entire collateral bed and produce as much peripheral vasodilation as possible. The further conservative treatment will be discussed later as it is similar for thrombosis.

ARTERIAL THROMBOSIS

Thrombosis has long been accepted as a hazard in surgery, trauma and obstetrics, its recognition as an equally important hazard in the management of strictly medical patients seems tardy and inadequate. The most surprising characteristic of thrombosis is its frequency. Burke[4] found 648 cases among 2,613 autopsies or a percentage of 24 per cent. Also in his study two-thirds were strictly medical cases unexposed to surgery, obstetrics or trauma. One answer to the question why a patient who has undergone surgical operation without thrombosis on a previous admission and then dies of thrombosis on the medical service without surgery lies in the main associated condition, namely cardiovascular disease.

It seems reasonable to expect that among elderly patients, particularly those with cardiovascular disease, a prolonged period of recumbency should result in changes conducive to thrombosis. However, that is not the case but the ones that develop thrombosis are believed to be decidedly thrombogenetic. While the changes consequent upon recumbency undoubtedly play an important rôle, the surprise in Burke's[4] report was the briefness of the period of the recumbency. Many medical cases died within the first three weeks of hospitalization with its resultant abrupt slowing of all vital activities, a period corresponding to the usual period in postoperative embolism. It would seem that the abruptness of recumbency with its demand for major ad-

justments, rather than its duration, played the more important rôle.

Virchow[5] evolved a conception of thrombosis, largely mechanical, that is accepted today. He declared the process to be dependent upon three conditions: (1) Alteration (slowing) of the blood current, (2) alteration (damage generally from infection or degeneration) in the vessel wall, (3) alteration (chemical and physical) in the blood content. Other students of this problem have furnished additional details of these three fundamental conditions. Welch[6] emphasized the combination of a slowed circulation and a damaged intima. Howell[7] and Murray[8] added heparin, a constituent of the blood formed in the liver. Peterson[9] believes the weather exerts a marked thrombogenetic influence; that certain meteorologic pressor episodes produce a fall in blood pressure, a sticky endothelium, an increase in fibrinogen, and a relatively acid organic status.

VENOUS PRESSURE

Nenda[10] has a theory of venous pressure variations which in a great measure are independent of the condition of the heart, that is of the arterial pressure, and are chiefly a function of the tissue. Anyone who has once seen how the entire circulatory system is most gravely endangered by the sinking of the venous pressure, when the arterial pressure is still in perfectly good condition, will never forget the impression gained that the condition of the tissue, the origin of the venous stream, deserves our special observation and care. This is what is seen in cases of burns, a pathological picture, by the way, where thrombosis plays a part too. From the tissue from the depots, one can imagine influences on the blood whose consequences cannot be neglected. Example: An individual has gone through certain infections, so a certain toxic-infectious material has gone through the blood at one time, was deposited in the tissue and passes from the tissue back into the blood on some provocation (shock, hypotonia of the tissue, sinking of the blood pressure, or postoperatively with loss of fluid and substitution from the tissue). Does it not seem a certain immune biologic reaction in the blood can be expected in such a case? Under certain conditions, probably infections above all, there appear in the plasma and the serum of an individual, substances which have an agglutinating influence on the individual's own erythrocytes, the same situation may easily be established through vasomotor influences or possibly after disturbances of the tissue respiration. A thrombosis may be the result of various conditions: agglutination, coagulation, hemolysis, and precipitation. Agglutination seems to top the list.

CAUSES OF INCREASE

The increased incidence of thrombosis since the World War and its preponderance among strictly medical patients can be attributed to a number of circumstances: (1) Lengthening of the average life expectancy; (2) consequent increase in number and longer survival of the cardiac patients; (3) increase in the hospitalization of patients, and in general, earlier and more widespread resort to recumbency, to the practice of "going to bed" with less provocation than in hardier days; (4) larger volume of surgery; (5) greater use, especially among the Germans, of intravenous therapy and diuretics. Thrombosis should be placed beside pneumonia as one of the hazards of hospitalization.

The immediate condition of the part involved in the thrombosis of an artery varies very greatly and is dependent on the size of the artery, the extent of the involvement and the rapidity of onset. The thrombus may be very incomplete and be formed so slowly that a collateral circulation may be developed which would be sufficient to maintain the life of the part, yet be inadequate to supply the muscles when work is demanded.

When the onset is sudden or when the thrombosis is superimposed on an embolus lodged in an artery, the symptoms are more severe. Thrombosis may be distinguished from embolism by the more sudden onset in embolism. The thrombus does not occlude the lumen at once, so there is a period, usually

a few hours when the symptoms are mild. At first there is a numbness or tingling of the extremity, then a feeling of cold and disturbed sensation progressing to anesthesia accompanied by a progressive loss of function. Pain soon becomes a prominent symptom; it may begin as a dull ache, but as the blood supply is diminished it becomes more severe until it is excruciating. Williams[11] tells of three cases of femoral thrombosis following peritonitis, two came to autopsy and the other amputation. Vessels in one showed an area of infectious arteritis; the others, arteriosclerosis.

PREVENTIVE MEASURES

Many practical measures to prevent thrombosis have been recommended. Homans[12] says most measures are aimed at three objectives: (1) To keep the fluid content normal, (2) to prevent a rise in intra-abdominal pressure, (3) to invigorate the venous return from the legs. He believes that if everyone confined to bed under conditions which threaten thrombosis could live with the foot of the bed elevated and could be protected from increased intra-abdominal pressure, thrombosis and embolism would never occur.

Thrombosis, however, does not arise from any single cause, and there is no specific preventive. Being a product of variables, no constant formula for prevention can be laid down. Inasmuch as thrombosis is an abnormality of the vascular system (heart, vessels, blood), maintenance or restoration of the normal structure and functioning of this system is the chief objective. Avoidance of, or protection against, outside interference with its normal function must likewise be included. Typical illustration of outside interference is furnished by encroaching tumors, by compression under Poupart's ligament, by the pressure of large volumes of fluid in the abdominal or pleural cavities. Cardiac competency is the greatest single defense against thrombosis, and its lack the greatest single danger.

Under certain circumstances the benefits of recumbency are also accompanied by a certain degree of risk or hazard. The circumstances have to do chiefly with cardiac impairment, regardless of age, with or without decompensation, but excluding the anginal type. The risks include: (1) A condition of general circulatory deterioration described by Laplace and Nicholson[13] as analogous to shock; (2) hypostatic bronchopneumonia, and, (3) thrombosis. They arise apparently from the abruptness of the change, as the critical period is relatively short, covering only the first two or three weeks. They can be reduced by any measures undertaken to make the transition to a complete bed-ridden status a gradual rather than a sudden process, both in time and in methods. These measures must be varied according to the nature and degree of the patient's illness, but in general as much mobility of the patient should be retained or provided as is compatible with his condition.

CONSERVATIVE MEASURES

The following intensive conservative measures may be used to open the entire collateral bed and produce as much peripheral vasodilation as possible: (1) A heated cradle 90 to 95 degrees, large enough to cover patient's extremities and abdomen; (2) vasodilators as suitable for the case (papaverine, spasmalgin, sodium nitrite, etc.); (3) place limb in optimal position, never elevate; (4) negative and positive pressure apparatus; (5) intermittent venous hyperemia; (6) light massage; (7) Buerger exercises; (8) forced fluids, and (9) heparin. Heparin for the prevention of thrombosis was discovered in 1916. Opinions differ as to whether heparin is an antithrombin or an antiprothrombin. It can be injected subcutaneously, applied to surfaces or injected into vessels. In injecting into general circulation it might act by altering the clotting time of the blood and this is most useful. Veins and arteries can be divided and sutured under the influence of heparin with perfect healing, complete patency and no evidence of clotting. In an embolectomy, heparin should be started 24 hours after operation in order to prevent undue bleeding at time of operation.[8]

VENOUS THROMBOSIS

The clotting of blood in the veins is a true vascular accident, as it comes on unexpectedly and with symptoms alarming to the patient. By far the overwhelming majority of venous thromboses occur in the lower extremities. These can be divided into four groups: (1) The superficial but not varicose vein may be affected. In this there are visible and palpable streaks along the inflamed vessel but usually little change in pulse and temperature, and little if any swelling of the calf or ankle. The natural course of the disease is slow regression and frequent recurrence. In the majority of cases typical Buerger's disease later develops, with involvement of the arteries. (2) Thrombosis in varicose veins which exhibits essentially the same symptoms —the size of the clots vary according to the size of the varicose vein. In the patchy type of phlebitis, large areas of periphlebitic edema and induration develop, which are painful to the touch, break down easily and form the base of indolent, profusely secreting thrombophlebitic ulcers. (3) Thrombophlebitis of the deep veins. This is entirely different and is recognized by an early step ladder type of pulse. A rise of temperature is often present but is not characteristic. There may be pain on pressure over the instep or over the calves. The pulses of the foot are diminished as the femoral artery contracts because of the irritation of its vasoconstrictors. If the clot remains small and in the pelvic vein no further signs develop and the thrombosis may be overlooked. Should a clot break loose suddenly and produce pulmonary embolism or when months or years later atypical varicosities develop on the lower extremities, it will become clear that small short clots in the pelvis, not obstructing the external iliac veins, have been overlooked. If typical and fully developed thrombophlebitis occurs there will be a sudden excruciating pain in the groin followed by a rapidly increasing swelling of the limb, which is first blue and pits easily on pressure but rapidly becomes white and hard, presenting the so-called milk-leg. (4) Thrombosis of the perforating veins of the muscles in the calf of the leg. This produces localized swelling of the calf, which is painful on pressure. The patient runs a febrile course and often suffers fatal pulmonary embolism.[12]

In most cases thrombosis has an infectious basis, and therefore a search must be made for the sources of infection. The treatment of the superficial type of thrombophlebitis can be accomplished by: (1) Elastic support in the form of bandage, stocking, elastic, adhesive tape; (2) röentgen therapy in small doses; (3) rest in bed; (4) elevation of infected part; (5) hot wet packs or a lighted cradle. As soon as pain disappears, patient is allowed activity.

In the treatment of deep thrombophlebitis or phlebitis of the communicating veins one must combat: (1) Embolism; (2) ascending thrombosis; (3) persistent edema. As soon as the diagnosis is made the following steps are taken: (1) Patient is put to bed; (2) limb is elevated; (3) heat cradle over limb; (4) restriction of fluids to 1000 c.c. a day; (5) salt is restricted; (6) ammonium chloride is given 15 gr. doses four times a day; (7) a mercury diuretic is given a few days after onset; (8) calcium gluconate intravenously; (9) diathermy; (10) fever therapy by means of cabinet;[14] (11) when swelling has subsided elastic support must be maintained after patient gets out of bed.

RESULTS OF 260 CASES

In our vascular clinic at the Garfield Hospital we have treated 260 peripheral vascular cases in the past four years. In this group we have had four cases of embolus, two in the femoral, and two in the subclavian with one death because of a bad heart. We have had ten cases of thrombus, five popliteal, three femoral, one iliac, one brachial, with three deaths, two popliteal and one femoral, and two amputations—both femoral, one below the knee, the other at mid-thigh, probably caused by the associated infection from the original trauma. We have had 50 cases of venous thrombosis—42 superficial and eight deep. These have all recovered and some are

still under treatment. The percentage of occlusive peripheral vascular emergencies in our vascular clinic is 24 per cent. Our patients have all received conservative treatment primarily because the patients were seen late in their emergency. Our death rate is six per cent.

CASE REPORTS

Case 1: M. T., age 27 months, white, baby girl. First illness was an otitis media which ruptured and cleared spontaneously in May, 1939. On July 11, 1939, child became ill with vomiting, diarrhea and fever, probably due to recurrence of otitis media. These improved under treatment, but general condition became desperate. On July 21, right foot became discolored. Child was admitted to Children's Hospital on July 22 and diagnosis made of saddle thrombosis of right iliac artery producing dry gangrene of right foot, with involvement of the left third and fourth toes.

On admission to our vascular disease clinic, July 24, 1939, the patient was critically ill. The right leg was cold, blanched and glassy in appearance as high as the knee. No arterial pulsation was palpable in the right leg, including the femoral artery. The skin was discolored to above the ankle, with distinct gangrene of the distal half of dorsum of foot and plantar surfaces of toes. Superficial arteries were distinctly palpable in the left leg, though there were areas of early gangrenous changes on the first, third, fourth and fifth toes, chiefly the third.

After admission a definite right facial palsy, incomplete flaccid paralysis of right arm and right internal strabismus were noted. Cranial configuration suggested hydrocephalus. Röentgenography showed considerable clouding of both mastoids without cell wall destruction, and increased lung markings suggestive of sinus disease.

Pavaex treatment of both lower extremities was started at 8:30 p. m., July 24, the treatment being given continuously. In addition to Pavaex suction-pressure the patient was given papaverine gr. one-fourth every six hours and ammonium chloride gr. five every four hours until August 18, with routine therapy for rhinitis, sinusitis, and otitis media. General condition improved rapidly, life being reasonably assured within two days. A total of 300 hours Pavaex treatment was given over a period of 25 days, 18 to 20 hours daily for five days, gradually reduced to six to eight hours daily. The left foot cleared rapidly, with restoration of normal color and warmth within a week without loss of tissue. The right foot began to show improvement after three to four days therapy. It was warm after two days, the blackened area of gangrene became well demarcated after five days with no further extension. Repair of the denuded portion of the foot with granulation tissue began about August 1. The distal phalanx of the right great toe had amputated itself by August 5, and five days later the distal tops of the remaining toes had sloughed off, but granulation tissue remained clean and healthy, epithelializing slowly from the borders. Palpable right femoral pulsation was detected on August 6. Popliteal pulsation was strong and dorsalis pedis pulsation questionable on August 17.

On discharge the child's general condition was excellent. She had a good appetite, elimination was well ordered, and she was playful and contended. The left lower extremity showed no lesions. The superficial arteries remained easily palpable. The right foot was covered with clean, vascular granulation tissue at the tips of the toes and the dorsum between the first and second metatarsals in a V-shaped area with the apex extending halfway up the dorsum of the foot. All arterial pulsation normally palpable was strong, including the dorsalis pedis.

On discharge from the vascular clinic at Garfield Hospital the child had apparently regained its health and gave every expectation of further uneventful recovery. Patient was last seen September 11, 1939. The area of granulation had become entirely epithelialized except for a small area where the large toe had amputated itself spontaneously. There was some slight deformity due to spontaneous amputations and loss of some of the plantar pad which with exercises I feel will be entirely overcome. The patient was discharged from the hospital, September 12, 1939.

Case 2: Mrs. D. G., age 67, white, female. Admitted January 31, 1939, because of severe pain and blanching in both limbs. Patient was a known cardiac with attacks of fibrillation. She took a bath after which she was seized with severe pains in both legs at 8:30 p. m., January 30, 1939. She was able to get to her room when she lost use of them. Both limbs soon became cold and ashen white with the greatest involvement in the left. On admission the temperature was 101 degrees and dropped to 98.6 degrees on her fourth day after which she had a daily rise each afternoon to 100 degrees until her

eighteenth day when 99 degrees was the peak. On March 13, 1939, her temperature rose to 100 degrees and she had severe pain in the chest. The pain and temperature both subsided in three days. Patient was discharged March 28, 1939. During her fifty-six days in the hospital she received 432 hours of Pavaex treatment. The right limb had diminished pulsations but was in no danger on admission. She was able to tolerate only two hours of treatment between rest periods the first day but at the end of six hours on the first day the limb was warmer and of better color except for the first and second toes, the tips of which had definite lines of demarcation. At the end of thirty hours' treatment, pain was practically gone. After forty-six hours of treatment on February 3, 1939, an area of bright red discoloration manifested itself in the region of the peroneal group extending from knee to ankle. On February 3, 1939, Buerger exercises were started. At the end of ninety-six hours on February 6, 1939, light massage was begun. Patient still had much pain in the calf on deep palpation and there was considerable swelling. On February 9, 1939, treatment was discontinued on the right side and she was allowed to leave the vascular clinic. She now received between six and eight hours of Pavaex daily. She progressed slowly but satisfactorily until February 13, 1939, when she had an infarct in the left lung. This, however, subsided in several days and patient continued her daily treatments until her discharge. On discharge the tips of the toes had not amputated spontaneously and it was thought advisable not to interfere. She also had slight foot drop and limitation of motion in the ankle. After being home several weeks she developed phlebitis in same limb and had a severe heart attack. The last report from her physician is that she is convalescing slowly but satisfactorily. This is a case of embolism with thrombus formation.

Case 3: L. T., age 62, Chinaman. Admitted to Sibley Hospital, April 29, 1939, because of gunshot wound of the abdomen. Patient was held up in his laundry by several colored men and was shot through the abdomen. An immediate exploratory laparotomy was done and seven perforations of the small and large bowel were closed. The abdomen was drained. The patient developed marked peritonitis, having a fever between 100 and 103 for two weeks. He received numerous transfusions and showed signs of improvement. However, life was still not assured. The drainage from his abdominal incision was profuse. On May 7, 1939, eight days after admission, he developed severe pain in the left lower leg which immediately became cold and blanched. On the following day a dusky discoloration developed and all pulsations were absent. Suction and pressure therapy plus the other conservative measures were now started and kept up continuously until most of the pain had subsided. He received suction and pressure therapy from May 8 until June 7, 1939. During this time he received about 350 hours. The foot went on to dry gangrene and the leg showed a line of demarcation at the junction of the middle and lower third. When the demarcation was in evidence, amputation was advised. The leg was amputated June 8, 1939, five inches below the knee. The circulation was good near the periphery but less toward the main vessel in which a clot was found. The stump healed promptly. The patient also had a bronchial pneumonia which began May 15, 1939. He finally recovered from his peritonitis, his bronchial pneumonia, femoral thrombosis, and amputation to be discharged July 23, 1939.

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THE SIGNIFICANCE OF OXYGEN TO THE SURGICAL PATIENT*

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THE history of medicine contains no more interesting chapters than those of circulation and respiration, therefore a few minutes review of the early beginnings and subsequent development of those parts pertinent to our subject might now be mentioned.

In the early eighteenth century the work of John Black,[1] of Edinburgh, proved that carbon dioxide was given off by the lungs during respiration.

In 1774 Joseph Priestly[2] isolated what he termed a "new air" and reported this experimental work before the Royal Society. In this Priestly listed the properties of the new air as follows:

1. It was insoluble in water but vigorously supported combustion.
2. It was consumed in the respiration of all animals.
3. It was produced by green plants.

In this same report Priestly suggested the use of oxygen for the purification of atmosphere and for the treatment of patients suffering from respiratory diseases. That is, I believe, the first reference advocating the use of oxygen as a therapeutic agent. He also discovered at this time that oxygen was necessary to convert venous into arterial blood.

Shortly afterward the monumental contribution of Lavoisier[3] appeared and he it was who gave this new air of Priestly's the modern name of oxygen.

Many other important contributions to the physiology of respiration were made by the scientists of the nineteenth century among which the following are the most important:

In 1812 Legallois[4] established the site of the respiratory center. The brilliant work of Hering and Breuer[5] established the reflex now known by their names. Also important was Pfluger's[6] conclusion that both excess of carbon dioxide and want of oxygen excite the respiratory centers which paved the way for the Meischer-Rusch[7] theory that the chemical regulation of the respiratory center is governed by the carbon dioxide tension of the blood.

This brings us to the modern conception of respiratory activity and in particular with the significance of oxygen to the surgical patient.

DEFINITION OF ANOXIA AND ANOXEMIA

The significance of oxygen to the surgical patient becomes obvious when the supply of this vital gas to the organ and tissue cells becomes less than their requirements. Therefore, a definition of terms most in vogue will serve as a common platform on which to stand in reviewing this problem.

1. Anoxia: One understands by the term a deficient supply of oxygen available to the cells of the body.

2. Anoxemia: Anoxemia on the other hand is a decreased oxygen content of the blood.

These, as listed by Barcroft,[8] are as follows:

1. The anoxic type: The anoxic type in which the tension of alveolar oxygen is lowered, such as occurs on mountain tops. The tension of the oxygen in the arterial blood decreases in proportion to the change in alveolar oxygen tension. This type is observed frequently during surgery and is usually very destructive in its effects. It is associated clinically with conditions such as pneumonia, pulmonary edema, fatigued respiratory center,

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etc. This type of anoxia has sufficient volume of oxygen but its tension is too low for diffusion into tissue spaces.

2. The anemic type: The anemic type in which anoxia arises from a decrease in the quantity of functioning hemoglobin. Both the tension and quantity of oxygen are normal. This type occurs during anemias, carbon monoxide poisoning and methemoglobinemia, etc.

3. The stagnant type: The stagnant type in which the blood flow through the capillaries is too slow and as a result there is an inadequate oxygen supply for the tissues.

This form is not infrequently observed following hemorrhage, shock, and local conditions associated with congestion.

4. The histotoxic type: The histotoxic type in which the tissue cells are unable to use the oxygen because of the dysfunctioning of the cellular processes. In our own clinical activities we have heretofore given supplemental oxygen to patients when an inadequate supply was existent, confident that the increased volume of the gas would correct this faulty metabolism. No thought was given to the inability of the cell to use this oxygen once the supply had been augmented.

TISSUE UTILIZATION OF OXYGEN

The work of Szent, Gyorgyi, Dische, Meyerhof and Parniss[9] has increased our knowledge of the complexities of the tissue utilization of oxygen and one may hope therefore that it should be possible for future clinicians to correct the faults of cellular oxygen utilization and to close the gap now existing in oxygen therapy.

The purpose of oxygen as a constituent of respired atmosphere is not complete until the needs of the tissue cells have been satisfied.

Throughout life a deficiency of the vital gas plays a part almost as important as the presence of the gas itself to the maintenance of existence.

It is the anoxemia developed immediately after the birth of an infant that whips respiration into activity and it is anoxia that quiets life's efforts before death.

Anoxic effects on the surgical patient create more difficulties for the surgeon than any other disturbing factor.

Haldane, the pioneer of modern oxygen therapy, once said: "Anoxia not only stops the machine but destroys the machinery."

CORRECTION OF ANOXIA

Correction of anoxia may be difficult but it is most essential to the complete recovery of the patient. Therapy is limited, oxygen being the most efficient combative agent. It is therefore important to consider a few of the elementary facts concerning oxygen and its transportation by the blood stream.

Oxygen constitutes nearly 21 per cent of the gases in the atmosphere and exerts approximately 155 mm. of partial pressure. After mixing with alveolar air which has lost some of its oxygen to the venous blood, the tension of the oxygen is reduced to 105 mm. and constitutes only 14 per cent of the gases present. Under normal conditions this head of oxygen will saturate 95 per cent of the blood leaving the lungs, the hemoglobin of which will be transporting oxygen at the rate of 19.2 c.c. to every 100 c.c. of blood, while its plasma constituent will contain about 0.3 c.c. of oxygen in solution.

Haldane has especially emphasized the importance of this latter oxygen present in physical solution in blood plasma because from this source the oxygen is delivered to the tissue cells.

The oxygen combined with hemoglobin acts only as a reserve to maintain the fractional contents of that in the plasma, since the plasma releases its oxygen in physical solution to replenish that of the cells which is constantly being exhausted by their functional activity. The oxygen combined with hemoglobin must therefore enter into solution in blood plasma before being delivered for tissue utilization. Approximately 35 per cent of the oxygen combined with hemoglobin then is lost during its passage through the capillary bed thus reducing the tension, or escaping tendency, of oxygen in the venous blood to about 40 mm.

I should like here to draw special attention to the constancy of this oxygen volume in solution and the efficient manner in which it is maintained, and I should like also to emphasize the fact that with anoxia the tissues suffer not so much from the quantity of oxygen but from the tension at which it is delivered.

EFFECTS

The effects of oxygen deprivation depend upon the speed of its development, the degree in which it exists, and its duration. In a severe rapidly developing anoxia the effects are immediate, beginning with increased respiratory and pulse rates, cyanosis, muscular twitching, and spasms of voluntary muscle followed by cardiac inhibition.

In acute anoxia with a less severe deprivation the symptoms are slower in developing and the effects less destructive. The first change is again in respiration which increases in both rate and amplitude. This reduces the tension of the alveolar and arterial carbon dioxide which results in an increased affinity of hemoglobin for oxygen, known as the Boehr effect.

This hyperpnea eventually decreases the pulmonary ventilation and cyanosis and shallow breathing develops along with changes of the senses, mental activities and muscular coordination, finally lapsing into unconsciousness. In long existing anoxia grave symptoms develop which are often the prodrome of death.

Lowenberg, Waggoner and Zbinden,[10] Caine,[11] Davis[12] and others have emphasized the pernicious effects of anoxia on the brain in nitrous oxide anesthesia. Three reported cases showed destruction of the cortex and basal ganglia.

Courville[13] has reported on 13 cases with nine deaths showing:

a. Sclerosis of scattered pyramidal cells.

b. Discrete pale areas in the cortex.

c. Necrosis of cortical layers and subtotal destruction of the cortex.

Such is the pathology common to any severe anoxia and an impressive demonstration of its destructive effects. Death occurred at times varying from 20 seconds to a matter of weeks after the administration of the anesthetic. The heart, kidneys and other organs likewise show the effect of oxygen deprivation, but the brunt of the attack is directed to the brain and heart, which are the least tolerant of its existence. The heart muscle is extremely sensitive to oxygen deficiency. Normal function ceases when oxygen debt amounts to 0.66 c.c. per gram of cardiac tissue, which is one-fifth of the tolerance exhibited by skeletal muscles. The normal heart utilizes large volumes of oxygen to maintain its efficiency but this amount is greatly increased by the demand of a diseased myocardium.

During the time of strenuous activity[14] the oxygen consumed by a healthy heart muscle is equal to the oxygen needed by the entire body during rest. Brain tissues exhibit a still greater reaction to oxygen deficit. Reflex irritability is abolished if the centers are without oxygen even for a short time, while unconsciousness[15] is produced if cerebral circulation is interrupted for six to eight seconds, and the cerebral cortex[16] cells are irreparably damaged if their blood supply is interrupted for 10 minutes.

DEGREE OF SATURATION

A computation of the amount of oxygen consumed from cerebral blood flow was made by Lennox, Gibbs & Gibbs[17] in an attempt to show the degree of saturation of oxygen in venous blood necessary to produce an unconscious state. Tests were made on unanesthetized human subjects from the blood returning from the brain in the jugular veins. Analysis showed that when the oxygen saturation fell to 24 per cent or less unconsciousness intervened.

The same authors demonstrated that there is no decrease in cerebral blood flow during sleep. This establishes rather clearly that the unconscious state of the brain is not entirely dependent on blood flow or its oxygen content.

Quaestel[18] suggests that the respiratory activity of the brain is restricted in its use of

metabolities. Glucose constitutes the most important substance used and therefore its presence as well as that of oxygen is imperative for physiological activity and their supply must be constant and continuous.

In view of the importance of oxygen one might very well ask: How do you recognize early anoxias? Here no clear cut rules are available.

Many clinicians consider the degree of cyanosis a good indication of anoxia, but it is a notably untrustworthy one in that the degree of cyanosis depends on the amount of reduced hemoglobin and not upon the ratio of reduced hemoglobin to oxyhemoglobin; actually a reduction of five grams of oxyhemoglobin, per 100 c.c. of blood, will create a cyanosis.

MORE SEVERE TYPES

The more severe types of anemias never become cyanosed even when there is a large deficit in oxygen, while cases of polycythemia vera manifest an extreme degree of cyanosis while there is an abundant supply of oxygen in circulation available for tissue use. There are no reliable symptoms of mild anoxia; the lactic acid of the blood may rise and the oxygen uptake may show only a slight increase when pure oxygen is respired, but such variances are neither constant nor reliable. A test commonly practiced by anesthetists is of some value even though it is only a clinical method of detecting the presence of an anoxic state. During anesthesia a patient may show sufficient depression to arouse suspicion concerning the available oxygen supply. The anesthetist will immediately refer to the character of the pulse. If there is a deficiency of oxygen, the individual pulse beats will vary in volume although there will be no irregularity of rhythm or rate (bigeminus or trigeminus pulse). As soon as the oxygen supply is increased these differences in volume of the pulse are immediately arrested and each beat displays the same degree of fullness. However, no definite point is specific and the picture must be reviewed as a whole.

PROPHYLAXIS OF ANOXIA

One cannot therefore escape the conclusion that the prevention of anoxia is the most valuable method of approach and with this end in view Waters, Wineland and Seevers[20] have grouped concisely the anoxic causes particularly pertinent to the surgical patient as follows:

1. High metabolic rate due to fever, fear, toxemia, and pain.
2. Reduced pulmonary alveolar surface due to disease or mechanical compression from position.
3. Poor oxygen carrying power of the blood.
4. Cardiac insufficiency.
5. Obstruction of respiratory tract due to:
   a. Wet lung, secretion of mucus, inhaled fluid, or vomiting.
   b. Laryngospasm.
   c. Defects in anesthetic apparatus.
6. Anesthetic technique (unwise control of gases).
7. Respiratory depression.
   a. Deep anesthesia.
   b. High spinal block.
   c. Central depression as with opium and derivatives of barbituric acid.

TREATMENT OF ANOXIA

1. In considering treatment for these cases, on which prophylaxis failed to prevent the development of anoxia,[21] the type of existing anoxia is first determined. The more severe type, the anoxic anoxia, must be considered with the idea of increasing the capillary oxygen tension and should therefore be given a high concentration.

2. The anemic anoxia should receive repeated transfusions of whole blood together with oxygen given in concentrations of 40 to 50 per cent.

3. The stagnant type will improve with oxygen therapy and proper medication to increase circulatory rate.

4. The histotoxic type will depend on a means of correcting the tissue cells inability to use the oxygen.

The proper administration of oxygen depends on three factors:

1. To institute the therapy early before anoxia has established irreparable damage.

2. To deliver the desired concentrations of the gas into the alveoli of the lung as indicated by the needs of the patient.

3. To maintain the administration until the anoxic state has been corrected.

Oxygen is administered by:

1. The oxygen chamber, an expensive but efficient method.

2. The oxygen tent, capable of maintaining mixtures of from normal atmospheric oxygen up to 70 or 75 per cent.

3. Oropharyngeal catheter, delivering oxygen at a maximum efficiency up to 60 per cent.

4. The Boothby mask, designed to deliver up to 100 per cent.

PROPHYLAXIS

According to Mayo and others,[22] oxygen is a prophylactic measure against postoperative pulmonary pathology and in thoracic surgery few will deny the efficiency of a supplemental oxygen supply in particular if operative procedures are about to remove much pulmonary ventilating surface. However, in passing it might be mentioned that the construction of a bronchus or other bronchial traumas may set up pulmocardiac reflexes resulting in cardiac inhibition and even exitus as has been observed by Sauerbruch.[23]

These accidents masquerade as respiratory difficulties and may be taken for a rapidly developing anoxia. However, they are the result of vagovagal reflexes and can be prevented by atropine medication.

In thyrotoxicosis[24] the postoperative supply of oxygen is productive of tremendous alleviation of symptoms. Others may be mentioned but what next concerns us is the relation of anoxia to shock, hemorrhage and cold.

All three of these conditions are characterized fundamentally by a decreased blood volume and this can only be adequately combatted by giving an abundant supplemental oxygen supply to raise the tension of this vital gas to the highest possible point and render the small quantity of circulating blood efficient for the transporting of oxygen to the tissues.

Finally one might mention briefly the high value of oxygen therapy in the treatment of abdominal distention the details of which are fully described by Fine, Hermanson and Frehling.[25]

SUMMARY

An adequate supply of oxygen during anesthesia is imperative and a supplemental oxygen supply in preoperative and postoperative conditions is worthy of wider application.

DISCUSSION

Dr. L. D. Norris, Fairmont: One point of great interest in Dr. Brace's paper is defining the terms "anoxia" and "anoxemia," "anoxia" meaning deficient supply of oxygen available to the cells of the body, and "anoxemia" meaning decreased oxygen content of the blood.

I was particularly impressed by the fact that it is the 0.3 per cent of oxygen in the blood plasma that supplies the tissue cells rather than the nearly 20 per cent that is carried by the hemoglobin. The anoxic type, as Dr. Brace tells us, is frequently observed during surgery where the tension of the alveolar oxygen is lowered to the point that it does not diffuse in the tissue spaces. In surgery and under anesthesia, especially in long operations, this is quite apt to be caused by fatigued respiratory centers, especially if nitrous oxide and oxygen are used in the old-fashioned gas machines, or the long drop ether anesthetics. Ethylene was a valuable contribution to anesthesia because it enabled us to get away from the anoxia associated with nitrous oxide. In the old nitrous oxide anesthetics we had to bring our oxygen percentage down to about ten or twelve per cent. We can maintain good anesthesia with ethylene by using almost as much oxygen as is contained in air.

Cyclopropane is another step in advance because we can use oxygen in high concentration, fifty per cent or more, and this coupled with the fact that in modern gas machines we are controlling the carbon dioxide in the mixture by passing this through soda lime, which takes out the CO^2, enables us to prevent fatigue of the respiratory centers.

The stagnant type of anoxia where the blood flow through the capillaries is too slow may be partly corrected by giving an anesthetic rich in oxygen

and the use of circulatory stimulants and fluids intravenously.

The histotoxic type in which the tissue cells are unable to use the oxygen because of the dysfunctioning of the cellular processes offers us problems that in the future may be solved.

I should like to stress the fact that in a great variety of conditions following surgery the patient is immensely benefited by the use of the oxygen tent, using mixtures from 40 to 60 per cent or more. In the toxic type of case where the pulse and respiration are fast, the increased oxygen will, by relieving the respiratory effort, bring about a decrease in the pulse rate and often clear up cyanosis. The patient is benefited, too, by getting a more abundant supply of oxygen to the brain and heart, both of which require more than any other organ of the body.

I should like also to mention the point about decreased respiratory centers in the medulla by the use of drugs such as the barbituric acid derivatives and opium and avertin. To illustrate that point I should like to tell you about the first avertin anesthetic that I gave. This happened some years ago. I had not read the instructions very well. A woman came in to be operated on who weighed somewhere in the neighborhood of 200 pounds, with some myocarditis. I gave her 100 milligrams of avertin to each kilo of body weight, which was too much for her. For several minutes the respiration stopped and she was very cyanotic. I took her up to the operating room, and I think the only thing that saved that patient's life was the administration of oxygen by forcing it into the lungs. She made no respiratory effort for ten or fifteen minutes and then very shallow. We kept that up for several hours. We operated on the patient and she got along all right.

Another very interesting valuable anesthesia, and one that is not thoroughly appreciated, is spinal. Fortunately now doctors who are taking up anesthesia know more about it, and with experts using it we do not see nearly the complications that we used to see. The mortality has dropped off to a great extent. When used correctly it is a godsend in a great many cases. One very troublesome little complication that will arise in giving spinals is the occasional case that becomes nauseated, and that may be produced by the spinal block going up a little too high; while it is not a dangerous thing, the use of oxygen will correct that in almost every instance.

I had a case about a week ago of a rather large man in whom I had some little difficulty doing a lumbar puncture down where I wanted to, between the second and third, and I went up between the first and second lumbar interspace, gave 200 milligrams of novocaine and took about three c.c. of spinal fluid. His spinal block went up far enough to block off his diaphragm and the lower thoracic nerves, and the man got sick. It was plain that he had a little difficulty in breathing. The minute I started oxygen on him his sickness disappeared and he had no nausea. That condition kept up for about twenty-five minutes, I suppose, and passed away, but if I hadn't had the oxygen to give him I think it might have been followed by more serious complications.

Dr. E. B. Tucker, Morgantown: I take it from what Dr. Brace says that in the extreme case the lack of oxygen really can only be supplied to the patient so that it can be used by the cells if given under sufficient pressure. I have heard numerous arguments by Dr. Evans and Dr. Brach on the use of oxygen in high concentration, and until last fall I do not believe Dr. Brach ever admitted that oxygen should be given to the patient in 100 per cent concentrations, but at that time he was willing to admit that it could be given. Dr. Evans has treated probably hundreds or thousands of patients with oxygen therapy, giving the oxygen at 100 per cent concentration, or as near so as possible.

I should like to ask Dr. Brace a question about cyanosis, or the giving of oxygen in cases in which cyanosis has been produced by the sulfanilamide group of drugs, neoprontosil, and so forth. I gave anesthesia yesterday to a patient with generalized peritonitis who had had neoprontosil for a number of days. This patient simply had a drainage of the abdominal cavity, but the cyanosis could not be relieved by ten per cent oxygen. The patient was given blood transfusion and afterwards oxygen by intranasal catheter.

It seems to me that most of the patients that are benefited by oxygen, appreciate oxygen and will take it by the intranasal route, with a mask over the nose or the face, in a tent, or any way that you care to administer it.

Dr. Thaddeus L. Montgomery, Philadelphia:

With reference to the oxygen carrying power of the patient, we had recently in our clinic a patient of the endocrine type, obese, in very difficult labor, a prolonged labor with rupture of the membranes and intrapartum infection. She was given large doses of sulfanilamide during this, and eventual vaginal delivery was achieved by operative measures. I think the patient died very suddenly under the anesthesia. She was quite cyanotic in her appearance from the sulfanilamide, and a question arose at that time whether it might in any way have interfered with the anesthetic or whether her obesity and constitutional condition had been responsible.

Dr. H. H. Howell, Madison: Have you had experience giving oxygen under pressure in cases of pulmonary edema?

Dr. J. G. Bullowa, New York City: The question of the sulfanilamide cyanosis is not relieved by oxygen. It is due mostly to the presence of methemoglobin in the blood. It is quickly relieved by methylene blue, either intravenously or often by mouth. A gram can be given per day, five grains three time a day.

Dr. Donald E. Brace, closing the discussion: Dr. Tucker brought out the uses of the 100 per cent concentration of the gas, and the question regarding the existence of cyanosis after administration of sulfanilamide. In answer to this I would state that there exists an increase of oxygen in solution in blood plasma during the inhalations of the higher concentrations of the gas.

With regard to the effect of increased pressure of the gas in oxygen therapy, Dr. Barach of Columbia University has practiced oxygen therapy with increased pressure and reported good results, but I do not know whether these have justified his laboratory experiments. In the past he felt that there was danger of acute oxygen poisoning developing with the use of high oxygen pressure, but subsequent results demonstrated the safety of the therapy.

Few of us realize that fever increases the metabolic rate 7.5 per cent for each degree of elevation. With fevers of 104 and 105 degrees there is a metabolic increase of 50 or 55 per cent. If this increase existed in a endocrine case we would hospitalize the patient and attempt to reduce the hypermetabolism.

Surgeons seldom consider a temperature of 105 degrees prohibitive of a surgical procedure but operate the patients at their convenience rather than wait until temperature and metabolic factors are at their minimum.

All hyperpyrexic surgical patients should receive preoperative oxygen therapy. This is readily established by the introduction of a oralpharyngeal catheter delivering oxygen at a rate of six litres per minute, a volume sufficient to reduce metabolic rate and lower the incidence of the anesthetic pulmonary complications.

Hyperthyroidism is another condition requiring oxygen therapy, especially when associated with other pathology capable of increasing metabolism. Oxygen can safely be supplemented in the preoperative period with the oralpharyngeal catheter—the patient, at first excited by the oxygen flow, gradually becomes accustomed to its presence and eventually allows the use of the more efficient Boothby mask at a time when oxygen is so urgently needed in the pre and postoperative periods.

All surgical cases of severe hemorrhage and shock should receive oxygen therapy. The oralpharyngeal catheter should be immediately introduced once the symptoms of anoxia manifest themselves, and the therapy should be maintained during the transportation of the patient to and from the operating room.

Sixty-five per cent of spinal anesthesia patients exhibit some degree of intercostal paralysis during the operation, this results in a 50 per cent increase in pulmonary morbidity. Oxygen therapy is essential to relieve anoxia during the operation and should be continued postoperatively until the effects of the narcosis have worn off. After the patient has been returned to bed the responsibility of observing his condition falls upon nurses who may or may not be able to detect symptoms of anoxia.

It is of paramount importance, therefore, that oxygen be given to correct any tendency toward an anoxic state.

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CARDIAC ANEURYSM*

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THE historical phase of this subject we have purposely omitted for the sake of brevity but reference is made to the essential facts throughout the paper.

When we refer to cardiac aneurysm in this paper we have reference to aneurysm resulting from coronary thrombosis and myocardial infarction; other cases have not been taken into consideration as we have never encountered them. Not until the period of 1914 had any case of cardiac aneurysm been diagnosed during life. Five cases were examined by Parkinson, Bedford and Thompson, clinically and x-rayed during life, and three of the cases proved to be correct at necropsy.

The pathology of cardiac aneurysm, as mentioned, is that of coronary sclerosis, thrombosis, infarction, necrosis of muscle, pericarditis and replacement fibrosis. The left anterior descending branch of the left coronary is the artery involved most frequently; occasionally the right coronary is involved also. The usual site is at the apex of the left ventricle, but sometimes it involves the anterior wall above the apex. The posterior wall of the left ventricle suffers from infarction about as often as the anterior wall, yet aneurysm of the posterior wall is a rarity and so far has not been diagnosed clinically. So it is with the right ventricle, aneurysm is practically never found despite the fact that thrombosis of the right coronary artery occurs quite frequently. There seems to be no satisfactory explanation for these phenomena.

The form of the aneurysm may be saccular or pouch-like communicating with the ventricle, may be large or small, and on x-ray plate, its form will depend on the size, the

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thinness of its walls, and the amount of replacement fibrosis within. The wall of the aneurysm is thin, composed of fibrous tissue and whatever amount of muscle tissue that is left. The pericardium is usually, if not always, adherent to this mass and great difficulty is experienced in separating it from the aneurysmal mass. In a large series of autopsies of coronary disease, it was found that aneurysm of the ventricle occurs in about nine per cent of these cases.

The etiology of coronary disease, whatever it may be, is the cause indirectly of cardiac aneurysm. Syphilis plays no part. Mycotic infection, secondary to endocarditis, is a cause, but rare. Traumatism, congenital defects of the septum, and rheumatism, have been mentioned but are a rarity in the etiology. Of the 16 cases reported by Parkinson, Bedford and Thompson, thirteen were due to coronary occlusion, the left anterior branch being the artery involved in the thirteen cases.

CLINICAL MANIFESTATIONS

Cardiac aneurysm occurs more frequently in males than in females, although arteriosclerosis and hypertension is more frequent in females. The age varies with the age at which thrombosis occurs most frequently. The two cases to be reported varied considerably, the first one was age 42, and the second 60.

Aron was probably the first to give the clinical description of cardiac aneurysm as we know it now and as it is found at autopsy. He emphasized the presence of considerable cardiac enlargement, dullness, diffuse and increased cardiac pulsation, contrasted with a weak pulse. In 1926, Libman called attention to the two most important physical signs, namely: the presence of a pulsation more marked between the apex and the sternum than the apex proper, also a poor dull first heart sound. Ball says that a clinical diagnosis of aneurysm of the left ventricle may be made when the following history and signs are present:

1. A history of a preceding attack of coronary thrombosis.

2. Visible and palpable apical pulsation well inside the left outer border of cardiac dullness.

3. A dull first heart sound of poor tone with little or no muscular quality.

He concludes that what one sees is out of all proportion to what is heard. This author further states that other less frequently found signs are: First a visible heaving, double, precordial pulsation. Second, a localized systolic murmur inside the apex. Third, gallop rhythm. Libman, Rendu and Ball point out the presence of gallop rhythm, as stressed by Ball. Gallop rhythm is most frequent during the stage of congestive failure and its disappearance is associated with the return of compensation. This sign was very prominent in our two cases and occurred several times before the final circulatory failure of congestive type. Several of the clinical findings mentioned were present in both cases but we were not sure of the diagnosis in the first case until an autopsy was performed. After this, we were on the look out for additional cases and the second case was diagnosed during life and proven at autopsy.

When it comes to the question of differential diagnosis, the radiologist is of great help, and Parkinson, Bedford and Thompson have given the following outline to be followed in x-ray examination.

1. Enlargement of the left ventricle and deformity of its contour.

2. A localized protuberance inseparable from the heart shadow on rotating the patient.

3. No pulsation in the aneurysmal zone as brought out by kymograph.

4. Calcification of sac wall.

5. Screen examination for presence or absence of pulsation in sac.

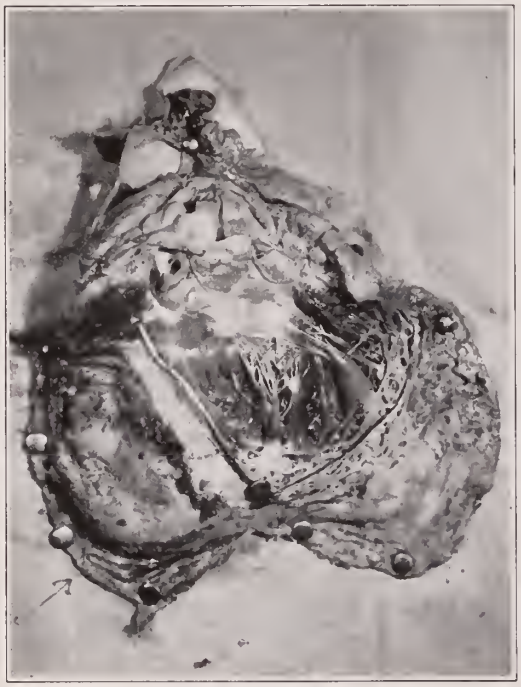
Finally, should there still be a question as to the diagnosis of cardiac aneurysm, the triad mentioned by Ball is in most cases conclusive.

1. Antecedent coronary artery occlusion.
2. Clinical recognition.
3. Röentgenologic proof.

There is no treatment for cardiac aneurysm when once formed. Certain it is they are more apt to occur in those cases of coronary thrombosis which have not had adequate bed rest and other recognized forms of treatment early after the occurrence of the thrombosis. These patients lead a miserable existence owing to the following findings: Severe dyspnea, orthopneic position, frequent attacks of congestive failure, gallop rhythm and sometimes pain until the terminal attack.

CASE REPORTS

Case 1: A white man, age 45, first entered the hospital in February, 1936. His chief complaints were that of a tired and run down feeling and pain in left chest in mid-axillary line just below the costal margin. He had had this pain off and on for two months, lasting one or two minutes and then disappearing. It was not associated with the taking of food, and there had been neither nausea nor vomiting.



Heart in Case 1

Past History: Unimportant except for severe typhoid, and a productive cough.

Cardiorespiratory: Thumping spells with the heart, slight dyspnea on exertion, but no orthopnea and no edema.

Gastrointestinal: Appetite good. No distress after eating, no bloody or tarry stools.

Genitourinary: Negative.

Family History: Unimportant.

Physical Examination: A moderately obese white man, lying quietly in bed, in no apparent distress or pain. Pupils react to light and accommodation. Sinuses clear. Teeth negative. Neck negative. Lungs negative to auscultation and percussion. Heart essentially negative. No murmurs, shock or thrills. Regular rate and rhythm. Blood pressure 120/85. Abdomen negative. Prostate slightly enlarged.

Blood: Total red count 4,300.000. Hemoglobin 85 per cent. Total white count 7,200. Normal differential. Sugar 100 milligrams per cent. Urea 20. Creatine 1.40. Wasserman: Negative.

Urinalysis: Chemical and microscopic: Negative.

X-ray of chest showed the heart measurements normal.

Electrocardiogram normal in detail.

He was discharged two days later with a diagnosis of intercostal neuralgia.

This patient was admitted again in August, 1936, with an entirely different story. The interne's notes show that on March 24, 1936, he suffered a severe attack of anginal pain. Pain was very severe and lasted until March 28 (unquestionably an attack of coronary thrombosis). Following the severe attack in March, he was hospitalized for a period of six weeks, went home and was allowed to sit up in a chair a few hours each day. When first seen there was very little change in his condition with the exception that his blood pressure was 110/90, a distinct fall. Heart rate rapid, but regular in rate and rhythm. No change in red count and hemoglobin but there was leukocytosis of 12,000, which later increased to 16,000. Three months later it was 8,000.

X-ray on August 31, showed the heart to be markedly enlarged in transverse diameter. An electrocardiogram at this time showed a rate of 120 and a T1 type of coronary occlusion.

Soon after this he began to have dyspnea, shortness of breath, orthopnea, in frequently recurring attacks, coupled with congestive failure, gallop rhythm, tachycardia and the appearance of fluid in various locations. On one occasion paracentesis of his abdomen was necessary.

He died on January 23, 1937, following a prolonged attack of congestive failure.

Autopsy was done the same day with the following report:

Chest and abdomen were opened by midline in-

cision. The abdomen contained several hundred c.c.'s of fluid. The liver was markedly enlarged, reddened, congested, although rather soft in consistency. Spleen was enlarged and very dark, more so than the usual postmortem finding. The left kidney was enlarged and showed an abscess of the ventral surface, evidence of an old infarct. The right kidney was also enlarged but did not show anything more than arteriosclerosis of the kidney.

The lungs were dark bluish-grey in color, and rather firm in consistency. The pleural space contained a small amount of fluid. The left lung was compressed upward and backward and yet the color did not change and there was a slight amount of fluid in this pleural space. The heart was enlarged and dilated, especially at the apex and its appearance did not resemble that of an average heart, but was widened and broadened, with a dull apex. Even through the pericardial surface it was very thin and apaprently dilated. The pericardium was adherent everywhere and was with difficulty stripped from the epicardial surface. The nearer the apex was approached the more dense the adhesions became. Also, at the central tendon there was marked adherence to the diaphragm. There was no fluid in the pericardial sac. The heart was removed after tying off the vessels and the approximate weight was about 500 grams. The left auricle had undergone a state of atrophy or sclerosis and was very small. The right auricle was markedly dilated as well as the right ventricle. The left ventricle was not exceedingly dilated but was rather thin and ironed out. The aortic, the mitral and the pulmonic valves were all fairly normal. The tricuspid valve was entirely destroyed and only the ring was present, with a very irregular mass distributed around it. The mouths of the coronary arteries were patent although there were marked tortuosities and sclerosis. On opening the left ventricle, at least one-fourth of the ventricle at the apex was completely destroyed, the result of an infarct following coronary thrombosis. The right was also involved but not so extensively. The infarcted area was filled with blood clots which had become fibrosed and at least 150 grams of organized clots were found in this area. The heart wall was completely destroyed, and so far as could be determined, the only support was the pericardium, both parietal and visceral. In the area where this was found, there was dense fibrous tissue and evidently the fibrosis had prevented a rupture and a hemopericardium.

Case 2: This patient was followed from April, 1934 to February, 1938. In April, 1934, he entered the hospital with a complaint of cramping pain in the lower abdomen and shortness of breath on exertion.

Heart was enlarged to the left. Blood pressure 130/70.

Electrocardiogram showed a ventricular and auricular rate of 90. P waves and Q R S normal in lead one. In lead two, there was a deep Q and slurring of the Q R S at apex. Lead three, showed a deep Q whose amplitude was greater than that of the largest complex in the cardiogram. In May, 1936, he was again admitted to the hospital with the same complaint, only his symptoms were more severe. Blood pressure 180/100. He was discharged with a diagnosis of hypertensive heart disease and cardiac infarction.

He again entered the hospital in December, 1936, with a complaint of dyspnea, and cardiac pain radiating to right arm. He was discharged with a diagnosis of hypertension and early congestive failure. He did not improve at home and was readmitted January 10, 1937, with a complaint of cough and dyspnea following an episode of pain in chest, cough which was productive and also distension of abdomen.

Physical examination showed a clinically ill white man who appeared much older than his stated age. He was dyspneic on moving about in bed or walking, and was of stout, short build, rather obese.

Head: Negative.

Lungs resonant except over both bases posteriorly where moisture was present and a wheezing type of respiration. Heart enlarged to the left. Second sounds of fair quality. First sound of poor quality. There was fullness and a heaving sensation over percordium, inside of nipple line. No murmurs, no arrhythmia. Blood pressure 150/100. Abdomen protuberant, showing small umbilical hernia. Liver three fingers breadth below costal margin, spleen not felt, no other palpable masses. Prostate not enlarged. No edema of extremities.

Reflexes, superficial and deep, normal.

Total red count and hemoglobin normal. Total white count and differential normal. Blood chemistry for sugar, urea and creatine normal.

X-ray of chest showed a marked increase in transverse diameter of heart.

On February 23, 1937, he was again admitted to the hospital on account of severe nocturnal

dyspnea, and indigestion. At this time he was orthopneic and slightly cyanosed. Heart sounds poor and systolic murmur heard at apex. Blood pressure 150/90. Leukocyte count total 12,250; later went to 17,000. Urine cloudy, specific gravity 1.015, heavy trace of albumin, pus three plus, occasional hyaline casts.

Electrocardiogram showed a ventricular rate of 80, low voltage in all three leads. Prominent Q in leads two and three with splintering in waves of Q R S in leads two and three and ventricular extrasystoles. Patient was confined to bed the greater portion of his time for a year.

In summation, he suffered numerous attacks of congestive failure, consisting of dyspnea, cyanosis, cardiac pain, moisture in lung bases, weak thready pulse, apical murmur and gallop rhythm, until the last attack on February 8, 1938.

Autopsy: The body was that of a man, age 60 years. The appearance was that of a man much older. The skin showed areas of blotchy and bluish spots over the arms and abdomen, evidently due to embolic phenomena. Skin of face was icteric as were the sclerae.

The chest was exposed by elevating the sternum. The right chest contained 48 ounces of turbid straw-colored fluid. The left chest contained only a few ounces. The right lung was compressed and shriveled from the pleural effusion and when reexpanded was of normal size. The cut surface showed evidence of chronic passive congestion. The left lung was displaced upwards and backwards, possibly due to enlargement of the heart. The pericardial sac was opened and a small amount of fluid was obtained at the base of the heart. The pericardium was rather adherent near the apex. The appearance of the heart showed that the apex was rounded and enlarged and did not have the pointed appearance of the apex of a normal heart. The left ventricle was enlarged also to the left. The right auricle was enlarged, dilated and very thin. The left auricle was atrophied and shriveled and unquestionably the right auricular enlargement was due to two factors: First, passive congestion of the lungs as result of several attacks of heart failure, and second, a large patent foramen ovale. Both ventricles were hypertrophied and dilated. The left was dilated more at the apex than at the base, and thinned out. There was an area of destruction at the apex of the left ventricle in which was found a large mural thrombus with beginning fibrosis or organization. From the base we could determine the involved anterior and posterior surface of the left ventricle. The pericardium was not markedly adherent at the apex. From the appearance of the thinned left ventricle the aneurysm was more recent or possibly slower in formation than in case one. Both ventricles showed numerous healed scars, evidences of cardiac infarction. The largest infarcted area involved the apex of the left ventricle as mentioned. The pulmonary valves were sclerotic and the mitral and aortic valves were fairly competent anatomically. The tricuspid valve was completely destroyed and only the valve ring with scar tissue around it left. The ostia of the coronaries were patent but the coronary arteries themselves were markedly tortuous, sclertoic and the left anterior descending branch of the left coronary was occluded. The right coronary artery was very similar except that there was no occlusion of the branches. One and a half inches from both ostia were fresh occlusions which had not become completely organized.

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Accuracy of Medical News

"Only those closely associated with modern trends in publication are familiar with the vast improvement that has been taking place relative to the publication of news of scientific advances," *The Journal of the American Medical Association* for January 20 declares. "A bulletin recently issued by the United Press to its bureau managers and division managers is worthy of quotation. It reads:

" 'It seems advisable to restate our traditional policy concerning handling stories of "cures" or other medical developments.

" 'This policy, which dates back more than twenty years, is never to call anything a cure, or in fact give any publicity to any remedy of any description, without a thorough investigation."

ADVANCED PNEUMOCONIOSIS WITH PULMONARY ARTERY THROMBOSIS*

By JAMES L. WADE, A. B., M. D., F. A. C. P.
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THIS case presents in a striking way some diagnostic pitfalls encountered in accurately describing the cause of death in cardiovascular catastrophes. Recent papers [1 2 3 4 5 6 7] have re-emphasized some of the sequelae occurring after thrombosis or embolism of some portion of the pulmonary arterial system. It is a common concept to a great number of physicians that pulmonary embolism or thrombosis is accompanied by signs of lung infarction, hemoptysis, dyspnea, and other pulmonary symptoms. This is by no means always the case. This case illustrates the diagnostic difficulties encountered sometimes in differentiating the coronary thrombosis syndrome and that associated with the symptom complex of thrombosis or embolism of the pulmonary artery. It is indeed possible that a thrombosis or embolus in one of the larger pulmonary arteries may actually result in an alteration of the coronary flow and produce the picture of myocardial ischemia. [8 9 10 11]

CASE REPORT

The patient, a white male, age 59, was seen in consultation with Dr. E. C. Morehead of Parkersburg in the Camden-Clark Hospital on July 17, 1939. Chief complaints, when first seen, were an intense, agonizing dyspnea occurring in paroxysms in which the patient was not able to talk, became very "blue", and had a sensation of pressure over the sternum. An inquiry into the present illness elicited the following significant facts:

(1) The patient had been at various times in the past twenty years a worker in a pottery factory, a checker of coal in a coal mine, and had at one time been admitted to a sanatorium for the treatment of tuberculosis. It is not sure that the patient had a tuberculous infection.

(2) The onset of this present acute condition was approximately three weeks before his admission to the hospital, at which time there had been severe nocturnal dyspnea, pain in the upper chest, with some questionable radiation to the arms; shock, cough, and expectoration of a small amount of blood-tinged mucus.

(3) Further inquiry into the background revealed that this man had not been particularly well for more than a year, having progressive exertional dyspnea, especially marked in the past eight months, and that he had been hospitalized in the southern part of the state, where a diagnosis had been made of silicosis.

Past Medical History: Hospitalized in 1928, with a diagnosis of tuberculosis; later at Hopemont for two months. Probably had negative sputum then, though he had night sweats and weight loss. There had been marked varicosities of the left leg for 20 years.

Family History: Father died at age 72, of "miners' asthma", questionably tuberculosis. Mother died at age 65 of "heart disease", etiology unknown. Two brothers are living, but both are said to have "silicosis." One sister died at age 40, diagnosis "paralysis."

Physical examination revealed an ashen-hued, apprehensive man, sitting upright in bed, talking in gasping breaths and fighting to get those breaths. There was marked cyanosis of the lips and lobes of the ears; the skin was clammy, and the pulse at the wrist was almost imperceptible. Blood pressure was measured at 80 mm. of mercury systolic, 40-30 mm. diastolic. The pupils were dilated, but reacted to light and accommodation, and the ocular fundi revealed sclerosis of the retinal arteries with moderate A-V compression, but no hemorrhages or

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exudates. The nose was not remarkable; teeth were carious; tongue heavily coated and the breath fetid. There was a distention of the vessels of the neck with visible pulsation. The chest was markedly emphysematous, with almost an entire absence of respiratory expansion. The note was hyper-resonant throughout, and there were occasional inspiratory râles in both bases. Cardiovascular system showed a moderate peripheral arteriosclerosis; the apex beat of the heart was not visible, but was palpable in the fifth interspace 10.5 cm. from midline. No thrill was felt over any cardiac area. The right border of cardiac dullness extended two cm. to the right of the right sternal margin, and the area of aortic dullness measured eight cm. in the second interspace. The heart sounds were only fair; the rate was 104 per minute; the rhythm was regular with a suggestion of an audible third sound (gallop rhythm.) There was a rather harsh, blowing murmur heard over most of the precordium, but loudest at the third left interspace. The pulmonic second sound was louder than the aortic second sound. Examination of the abdomen revealed a moderate distention, no demonstrable fluid wave, and the edge of the liver was palpable three cm. below the right costal margin. No glands were felt in the inguinal areas. Genitalia showed no edema; prostate was enlarged grade one plus, and there were no marked hemorrhoidal protrusions. Extremities showed cyanosis as noted; the arterial channels all appeared open; feet were cold and blue, and the left leg presented definite evidence of superficial venous thromboses.

Laboratory findings were as follows: Urinalysis: color, yellow; specific gravity, 1.015; reaction, acid; no sugar or albumin; occasional pus cell. Blood Wessermann and Kahn, negative. Blood count: hemoglobin, 98 per cent; RBCs, 5,420,000; color index, 0.81; WBCc, 11,700; neutrophiles, 73 per cent; banded forms, 29 per cent; segmented, 44 per cent; lymphocytes, 26 per cent; monocytes, one per cent. Blood urea nitrogen: 23 mg. per 100 c.c. of blood.

Electrocardiographic study was immediately done with the following findings: Auricular rate, 104; ventricular rate, 104; rhythm, regular sinus rhythm; P-R interval, .14 to .16 sec.; Q-R-S interval, .08 sec.; axis deviation, questionable to the left. The "P" waves were upright in the conventional leads, and were definitely larger in amplitude in leads two and three, and inverted in lead 4F. (4F = left leg electrode at apex; left arm electrode on left leg.) "T" waves were isoelectric in lead one, definitely inverted in two, three and four. The S-T segment was only slightly depressed in lead one, definitely depressed in leads two, three and four. These findings did not impress the examiner as being typical of an infarction involving the circumflex of the right coronary artery, but were considered as probable evidence of this condition. (See Figure 1).

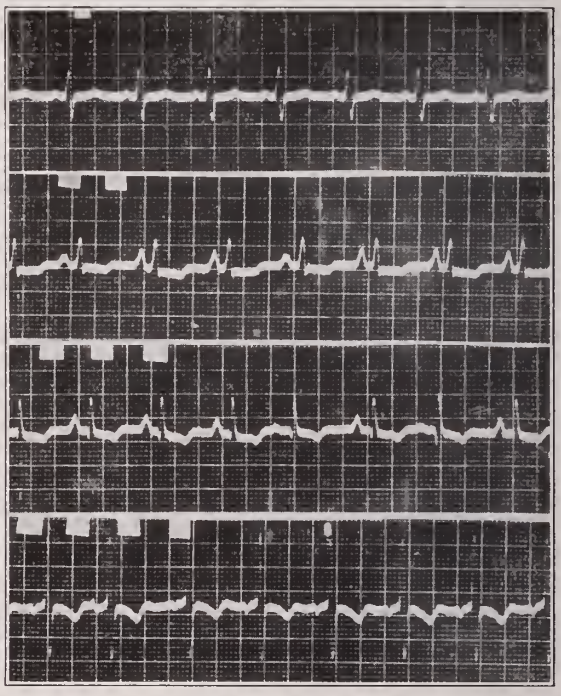

Figure 1: Electrocardiographic tracing taken four hours after admission. Leads 1, 2, and 3 conventional; 4F = left leg electrode at apex, left arm electrode on left leg.

The following note was made after examination: "Dyspnea of peculiar type—paroxysmal; cyanosis; substernal oppression; no definite 'anginoid pain'; history not typical of acute coronary occlusion.

"Impression:

"(1) Heart disease:

"A. Arteriosclerotic.

"B. Cardiac hypertrophy: coronary sclerosis with possible thrombosis right coronary artery and myocardial infarction. Right ventricular hypertrophy.

"C. R.S.R.

"D. 2B, (complete limitation).

"(2) Generalized arteriosclerosis.

"(3) Varicose veins of legs, left more than right."

Treatment: Relief was directed toward the dyspnea, and aminophyllin, grams .5 in 200 c.c.'s of 10 per cent glucose was given. Morphine sulphate was not used, sedation being obtained by the use of rectal nembutal and oxygen inhalations. Quinidine sulphate was cautiously administered in doses of three grains every eight hours. An intravenous administration of Fisher's solution (in an attempt to relieve the marked anuria) had to be stopped because of convulsions.

Subsequent Course: The patient seemed to be somewhat improved at the end of twelve hours. His blood pressure had risen to 100 mm. of mercury systolic, 60 mm. diastolic; his heart sounds were more clearly heard, and his cyanosis had partially cleared. He continued, however, to have the rather peculiar syndrome of apparent freedom of breathing with sudden onset of extreme dyspnea in which he could do no more than sit upright and gasp through his bluish lips. He lived until the next day, at which time after suddenly turning on his right side, he became stuporous and ceased breathing.

AUTOPSY REPORT

Thorax: Both lungs are firmly attached by tough fibrous pleural adhesions to chest wall, diaphragm and mediastinum so that the potential pleural space is obliterated. Right lung, 660 gms.; left lung, 420 gms. Both lungs have a very dark bluish black color with many emphysematous areas present near the surfaces of the upper lobes. On palpation several hard areas of large size are felt. On section these have a dark red color and obviously are formed by clotted blood. They measure up to five cm. in diameter. Some show small central cavities.

A large firm gray thrombus (Figure 2) almost fills the pulmonary aorta at its bifurcation. The left branch of this vessel is greatly dilated and nearly filled by a lamellated thrombus, though a small canal has persisted at one side allowing for some circulation. This thrombus extends out into the main subdivisions of the artery and many of the smaller branches are completely plugged (Figure 3). The right pulmonary artery is about normal size but is filled by an organized thrombus.

Both lungs show marked fibrosis and microscopically reveal large areas entirely occupied by dense fibrous tissue (Figure 4). Carbon pigment is also very abundant; no evidence of tuberculosis is found. The heart weighs 440 grams; it shows extremely large and hypertrophied right chambers. The left ventricle is comparatively small. The coronary vessels are large and tortuous and somewhat sclerotic but no obstruction is found. The heart muscle shows no areas indicative of infarction.

Abdomen: The abdominal viscera and the entire urinary tract show nothing of related importance. The abdominal aorta and its main branches are not atheromatous.

DISCUSSION

Dr. Matthews: We have been privileged here to study the termination of a long-standing case of pulmonary fibrosis, "pneumoconiosis." The etiology has been exposure to atmospheric dust in which carbon has predominated. The possibility of other mineral substances such as silica being partially concerned seems likely, since carbon particles alone are not thought to produce such pronounced fibrosis in the lung tissue. Tuberculosis is a common complication of this condition, though we have failed to find such in this case.

About three weeks prior to his death, this man developed pain in the chest, with dyspnea, cough and some blood-tinged sputum. It seems likely that the pulmonary thrombosis first occurred at this time, whehter or not an embolus originating in one of the leg varicosities was responsible is not clear. Certainly the retarded pulmonary circulation and the chronic fibrosing inflammatory reaction could provide an excellent basis for spontaneous thrombosis. In any event the clinical picture seems well accounted for and this condition would seem worthy of consideration as a terminal event in pulmonary fibrosis.

Dr. Wade: From experimental data available (Gibbon, Hall, Jackson, et al, [8 10 11] it would seem that obstruction to the pulmonary artery can definitely produce right ventricular strain, and if of long standing, hypertrophy. In this case, clinically, there was definite evidence of right ventricular and auricular strain with hypertrophy, diminution of the output of the heart, decrease in systemic arterial pressure, and increased portal pressure. The picture was that of definite shock, and no doubt we were dealing with an acute cor pulmonale as mentioned by White, McGinn, Churchill, and others.[3 5] In retrospect, however, no doubt there had been a previous large thrombotic or embolic incident with subsequent recanalization, and in all probability several smaller emboli. It is of interest to note the long standing varicose veins of the left leg, and to speculate as to their possible connection with the pulmonary artery thrombosis.

Now as to the tentative diagnosis that was made —that of possible acute coronary occlusion with myocardial infarction, we must reconsider and reconstruct. The pathologist stated that there was no evidence of fresh coronary artery occlusion, but that the coronary arteries were sclerosed, grade III. It is entirely possible that with the pulmonary thrombosis there had occurred an alteration in the coronary flow, with consequent myocardial ischemia. Several factors might have played a part in producing the picture.[14 15] (1) Anoxemia of the heart muscle because of deficient arterial exchange in the pulmonary beds; (2) possible vagal vasoconstrictive action on the coronary arteries reflexly from the pulmonary innervation; or (3) the shock produced with the fall in blood pressure, and deficient coronary circulation. Reference may be made to case reports by several authors in which the problem of pulmonary thrombosis simulating coronary thrombosis occurred.[1 6 7]

Electrocardiographic changes, somewhat similar to those found in this case have also been reported.[12 13]

COMMENT

A case presenting difficult diagnostic features in differentiating acute coronary artery occlusion from pulmonary artery occlusion has been reported. The literature has been fairly completely reviewed and it has been found that such a possibility should be considered in any case presenting clinical features as outlined.

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Figure 2: Gross specimen, pointer showing laminated clot, pulmonary artery.

Figure 3: Photomicograph of cross section, pulmonary artery (low power).

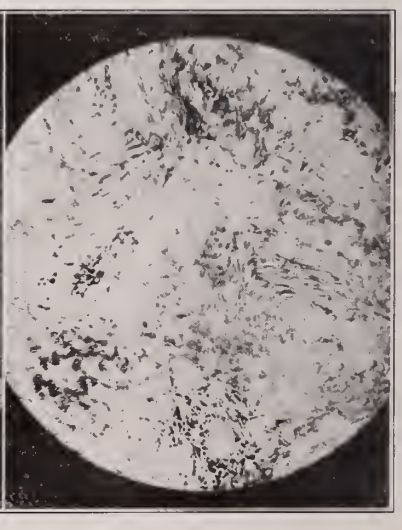

Figure 4: Photomicograph of silicotic tubercle (high power).

EDGAR ALLAN POE

(Psychiatric Case Study)

By EDWARD F. REASER, A. B., M. D.
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EDGAR POE's paternal grandfather was David Poe, one of the ten children of John and Jane McBride Poe who came to America about the year 1748. They were Scotch-Irish. David Poe was a wheelwright who after moving to Baltimore prior to the Revolutionary War became a dry goods merchant. He was appointed assistant deputy quartermaster for the Continental Army and his service in procuring supplies for the soldiers earned for him the title of "General" Poe. The paternal grandmother was Elizabeth Cairnes, also of Scotch-Irish descent. They both lived to advanced ages.

There is little of record concerning the maternal grandparents who were both actors in the Convent Garden Theater in London. The maternal grandfather was Henry Arnold and the grandmother Elizabeth Smith Arnold.

His father, David Poe, a native of Baltimore, left the study of law to take up theatrical work, and became an actor of mediocre ability. He disappeared in New York in 1809, when Edgar was an infant and before the birth of Rosalie. We do not know whether he deserted his family or died. It is believed that he was alcoholic.

Poe's mother was born Elizabeth Arnold, a native of England, and married an actor named Hopkins. Mr. Hopkins died shortly before she married David Poe. She was born in 1787 and died in Richmond, Virginia, in 1811, probably of pulmonary tuberculosis. She was an actress of considerable talent and is said to have been a woman of beauty. When David Poe disappeared she was left in poverty with two children and pregnant with the third, Rosalie.

Edgar Poe had one brother, William Henry Leonard Poe, born in 1807, who lived with his paternal grandparents in Baltimore until his death from tuberculosis on August 2, 1931. In the summer of 1825 he visited Poe in Richmond dressed in nautical uniform. This event probably greatly impressed young Edgar. Edgar later lived with him for a time in Baltimore when he was an invalid, and probably learned from him many things which he later passed on in his writings.

The only sister was born in 1810, after the father had disappeared. Later her paternity was brought into question. It has never been definitely settled whether there was ground for the rumor but we know that Mr. Allan wrote to William Henry Leonard Poe to the effect that he had correspondence in his possession which cast doubt on Rosalie's paternity. Rosalie Poe was a mental defective. She developed physically but not mentally. After the mother's death she was taken into the home of a family in Richmond where she was treated kindly and where Edgar often saw her. Later in life she was admitted to an institution in Washington, D. C., where she died.

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PERSONAL HISTORY

Edgar Poe was born at 33 Hollis Street, Boston, Massachusetts, on January 19, 1809. So far as we are informed delivery was normal and without complications. We have no record of infantile injury or disease. We know of no early autoerotic tendencies or convulsions.

There is no history of more than the ordinary childhood diseases. As a child he was precocious and easy to learn. He was often prompted to give toasts at the dinner table.

Unfortunately for the child he was without parents early. His father disappeared shortly after his birth and before the birth of his sister. His mother was in poverty but she continued her efforts to support the children until her death. Then Edgar and Rosalie were taken into different homes in Richmond. Edgar was a child of great charm and vivacity. He was readily accepted in the Allan household and at different times Mr. Allan indicated his intention of adopting him. This was never done. He later quarreled with Mr. Allan. Mrs. Allan and her maiden sister who lived with them loved him and were kind to him. He was well treated in his foster home in his childhood but outside he was taunted by playmates regarding the lowly calling of his unfortunate parents. He developed precociously. "The year 1823 may be said to definitely mark the end of his childhood."

EDUCATIONAL

His first schooling was under a Scotch schoolmistress in Richmond. William Irvin later taught him. In 1815 he was taken to England and Scotland. He attended school at Irvine, Scotland (where he planned to run away) and at Chelsea, England, and at the Manor House School at Stock Newington under Reverend John Bransby. Returning to Richmond in 1820 he attended the academy of William Burke, and later that of Joseph H. Clark. Mr. Allan wanted him to attend the new University of Virginia and placed him under a private tutor in preparation. He went to Charlottesville and enrolled in February, 1826. Here he demonstrated certain tendencies. He was ambitious to be a social leader. He had a feeling of superiority in mental endowment. He was especially proficient in language, literature and oratory. He did not care for mathematics. He had ability in amateur theatricals. He had little or no difficulty with teachers. In fact he was a favorite with his teachers because of his ability. He had a few friends among the students but was rather seclusive. He studied much but found time to play card games with his fellows. In those days drinking was fashionable and considered harmless among the gentlemen of Poe's home section. He drank some. A small amount of alcohol affected him excessively. He made many gambling debts in an effort to recuperate his small fortunes. He always hoped for the "run of luck" which would enable him to pay his "debts of honor" but it failed to come. Mr. Allan gave him very little and when his creditors finally wrote to Mr. Allan he went to Charlottesville where he refused to pay Poe's debts. He required Poe to return to Richmond and gave him a place in his office. We do not again see Poe in school until he entered West Point Military Academy, July 1, 1830, after he had been an enlisted man in the regular army. At West Point he led a solitary and unhappy life. Although he had made a good record in the army, in those days a man who had been enlisted was not in favor with the students. Poe was older than the other cadets. He was their superior in many respects. He was different in disposition. He was different in tastes. He lacked money for the ordinary things. He was like a student of today who could not afford to buy a coca cola. He had only the fewest clothes necessary. Mr. Allan made no effort to help him and ignored him. Poe deliberately brought about his own dismissal March 6, 1831.

INDUSTRIAL

From the time of his return to Richmond from Charlottesville in the first part of 1827, until March of the same year Poe worked in the office of Mr. Allan. He was in an intolerable situation. It must change and he and Mr. Allan quarreled violently. He took the name of Henri Le Rennet and went to Boston by way of Norfolk. He induced Calvin S. F. Thomas, an obscure printer in Boston to publish his first volume, "Tamerlane and Other Poems." The edition was small and yielded no profit.

He then enlisted in the standing army of

the United States in Boston, May 26, 1827, under the name of Edgar A. Perry. He served with honor and was discharged April 15, 1829. His purpose was to enter West Point. (A more detailed statement will be given under Military Service)

Following his dsicharge from the army he was awaiting his appointment to West Point and spent some time in Baltimore at the home of his paternal aunt, Mrs. Maria Clemm. While there he made some literary contacts. He was unable to get any material help from Mr. Allan. He made at least one trip to Washington to see the Secretary of War in regard to the appointment. In December, 1829, a book of poems was published in Baltimore.

LITERARY

Before obtaining his appointment and starting for West Point in June, 1830, he made a trip to Richmond and again quarreled with Mr. Allan. We have noted the time spent at West Point. After his dismissal he went to New York where he was in poverty. He went to Baltimore again about the end of March, 1831, to the home of Mrs. Clemm. Here he wrote and made some literary contacts. He started his reputation as the creator of the short story. At that time his work was not appreciated. He was financially unsuccessful. He went to Richmond and became editor of the *Southern Literary Messenger* where his work attracted attention. He increased the subscription list remarkably. He soon started a series of criticisms which have since been given literary value, but which at the time made enemies for him. He went into a depression, started drinking, quarreled with the owner and left. In 1837 he arrived in New York at the time when the panic was at its worst. Mrs. Clemm, then his mother-in-law, took in boarders. She managed the household and took care of Poe and Virginia, his child-wife. In 1838 he went with his family to Philadelphia and in 1839 two volumes of his works appeared in print. In April, 1844, he returned to New York and in 1845 he was editing the *Broadway Journal*. He was always hoping to establish a magazine of his own but was never able to finance it. He could secure positions but was unable to hold them. His income from his various connections was always meager and he was constantly in need of financial help. At times subsistence depended upon Mrs. Clemm's ability to fill her basket by visits to her neighbors. (There were no PWA writers' projects in those days). Poe made vain attempts to secure a government appointment. He also lectured at times and was an eloquent and forceful speaker.

He was reckless with his money and failed to get along well with his employers and with other employees.

He had a strong feeling of superiority which made itself manifest at times. He was industrious when he was physically able to work. He refused to do anything other than work of his preference. He changed locations frequently because of his lack of stability and his inability to adjust on a permanent basis. He was capable but not dependable. He is credited with creating the art of the short story.

MILITARY

During the time he spent in the army he was assigned to Battery H of the first U. S. Artillery. After a short time at Fort Independence in Boston Harbor he was stationed at Fort Moultrie, Charleston, S. C. The time spent at the latter place was a very important period in the life of Poe because of his wanderings along the coast in solitude and revery. He was a good soldier and was promoted through all the grades to regimental sergeant major, the highest non-commissioned office. He was well liked by his superiors and was recommended for West Point by them. He was able to secure his discharge for the purpose of getting an appointment to the Military Academy by paying another sergeant seventy-five dollars to substitute for him.

Poe's temperament was changeable. At times he was lively and optimistic, full of energy, and hopeful. At other times he was

hasty, fiery, domineering, perverse, irritable, sarcastic, unreasonable and petulant. He was subject to periods of depression. His drinking was symptomatic of the latter periods. He was sensitive to alcohol and a very small amount of it produced effects in him out of proportion to its usual pharmacologic action. Poe's natural goodness and kindness is attested to by Mrs. Clemm, his paternal aunt and mother-in-law, who said: "He loved Virginia with a tenderness and devotion which no words can express, and he was the most affectionate of sons to me." She also said: "Eddie had no idea of the value of money. I had to attend to all his pecuniary affairs. I even bought his clothes for him. He never bought a pair of gloves or a cravat."

Poe's kindness to his sick wife is noteworthy. He sat by her bedside and attended to her. In their poverty they lacked bed covers and he kept her covered with his military greatcoat, a relic of his West Point days. However, he on one or more occasions, while she was seriously ill, left her to go on a spree to Jersey City where he was found "wandering about like a crazy man."

Longfellow, in making reference to the sarcastic and unduly severe criticisms which Poe made of the writings of his contemporaries, attributed them to "the irritation of a sensitive nature chafed by some indefinite sense of wrong."

Poe wrote to Mrs. Clemm on one occasion and said: "I must die."

The year 1842 marks a definite personality change in Poe. From that date he "began to disintegrate."

SOCIAL

Poe lost his parents too early to have any definite parental attachments. He was an infant when his father disappeared. His mother died when he was two, but he remembered her to some degree. He was greatly attached to Mrs. Jane Stith Stanard, the mother of a playmate, who was very kind to young Poe. She became insane and died when he was about fifteen. He never forgot her and some of his poems refer to her directly.

Poe did not get along with Mr. Allan. They quarreled on every occasion of Poe's return after his first departure from the Allan home, when he left to go to the university.

As a boy Poe enjoyed swimming and engaged in it freely. He liked to play the flute. As a child he enjoyed playing with little girls better than with boys. He went to religious services and joined the Episcopal church.

In his last letter to Mr. Allan, April 12, 1833, he stated that he was not addicted to any vice nor had he offended society in any way. He asked Mr. Allan for pity and to save him from destruction.

ANTI-SOCIAL

Poe was never arrested so far as we know, except for debt. He was imprisoned for a debt of eighty dollars in Baltimore on November 7, 1931. The effect on his sensitive nature was unfortunate.

Although he used alcohol freely at intervals there were long periods of abstinence. He drank quite freely when he was a student at Charlottesville, but so did many of the other students.

He said: "During these fits of absolute unconsciousness I drank God only knows how often or how much." In this statement he referred to periods of dipsomanic indulgence which were inaugurated by periods of depression.

It is also believed that he may have indulged in the use of opium from time to time, 1831 to 1834. On this point history is not clear.

So far as we are able to judge Poe never had a heterosexual experience. Although he was married we believe that he never had coitus with Virginia. There is no reason to believe that he ever indulged in extramarital relations.

After the death of his wife, Virginia, he was engaged to two women at the same time and carried on flirtations with others. He talked of loving first one and then another. He told Mrs. Clemm of these affairs and on one occasion she was prepared to receive into her home a new Mrs. Poe. We must re-

member that she was as a mother to Edgar. She knew him far better than anyone else could. She knew of his life with Virginia. She probably understood his shortcomings better than she knew his greatness.

Poe was engaged to Elmira Royster when he departed for the University of Virginia. Their letters were intercepted and she was deceived into believing that he had not written to her. She was taken away and encouraged to marry another man. Poe was greatly distressed by this experience.

He married Virginia Clemm, his first cousin, secretly in Baltimore, September 22, 1835. He was twenty-six and she was thirteen. On March 6, 1836, after Poe had gone to Richmond and become editor of the *Southern Literary Messenger* and had sent for Mrs. Clemm and Virginia, he and Virginia were publicly married. She never developed physically. She then had incipient tuberculosis.

In February, 1831, Poe had a discharging ear. He had already been advised to give up swimming on account of heart trouble. In November, 1831, he was in bad health but the record is not clear as to the nature of his illness. He is said to have been suffering with his heart then. In the spring of 1842 he had an attack of heart trouble. In August, 1842, Dr. Mitchell let him have money and advised him to go to Saratoga Springs, N. Y. for rest and recuperation, because of a bad heart. By August, 1847, when he was 38 years old, he was "reduced to a quivering bundle of sensitive nerves." He was very ill at the time. In March, 1848, Dr. Francis said he had heart disease. By that time he was subject to spells of delirium. He had headaches for months in 1849. He is said to have had periods of "brain fever."

PHYSICAL EXAMINATION

The only physical examination we have recorded is that which was made when Poe, at the age of 18 years, offered himself for enlistment in the United States Army. He was five feet, eight inches tall, had gray eyes, brown hair, and a fair complexion. Breathing was normal and the respiratory movements symmetrical. No heart disorder was noted. His limbs were symmetrical and free from deformity.

For the purpose of mental examination we must consider the history of Poe in longitudinal section with occasional cross section views. Poe was neat and tidy. His clothing showed evidence of wear and mending, but it was clean and properly adjusted. During his lucid intervals his facial expression was intelligent and expressive of enthusiasm. He had a high forehead and a youthful bearing.

ATTITUDE

His attitude varied. "A period of feverish activity was always followed by a period of collapse." There were times when he was extremely active, working at his editorial duties, reading, writing, and conversing. More or less suddenly fits of depression came upon him for no apparent reason and he became miserable. It was then that he sought refuge by drinking, thus completing a vicious cycle.

Ordinarily Poe was noted for his ability as a conversationalist. He talked as if dictating when absorbed in a topic. There were times when he seemed oblivious to his surroundings while engaged in an interesting discussion. Sometimes, in his periods of depression, he was incoherent.

Poe wrote to Mr. Burton in 1839. In Burton's undated reply he said: "I am sorry you have thought it necessary to send me such a letter. Your troubles have given a morbid tone to your feelings which it is your duty to discourage." A few weeks later he quarreled with Mr. Burton and suffered a nervous collapse. He always chafed under poverty and regarded his job as a makeshift. We have his own record of depressions, even with suicidal tendencies. On September 11, 1835 he wrote to J. P. Kennedy, telling fo his depths of despair although he did not know the cause. In 1849 his words "veered around to the idea of self destruction." He once wrote to Mrs. Clemm: "I must die." In 1847 he tried to commit suicide with laudanum. "He walked the street in madness or melan-

choly, with his lips moving in indistinct curses or with eyes upturned in passionate prayers (never for himself)."

"It has not been in the pursuit of pleasure that I have imperiled life and reputation and reason. It has been in the attempt to escape from torturing memories, from a sense of insupportable loneliness, and a dread of some strange impending doom," Poe told Mrs. Whitman. "He confessed to at least one fully developed delusion of persecution." He visited the home of John Sartain in Philadelphia and asked him for protection against assassins. He accused practically every one of the writers of his day of plagiarism and dwelt upon this subject to the extreme. At the same time he either fabricated or intentionally misrepresented the events of his own life. By the spring of 1845 he had well developed paranoid delusions. He lectured on the subject: "Cosmography of the Universe" although he had no scientific training or experience. His "Eureka" was the expression of a delusion of grandeur. When he gave his lecture on the cosmography to about sixty people for the purpose of raising funds for a trip through the south and west to secure advance subscriptions for a new magazine to be projected he was "exalted." When he went to the office of George P. Putnam, publisher, he offered his manuscript "Eureka," and suggested an immediate edition of fifty thousand. Putnam later published five hundred. Poe had thoughts of constructing a thinking machine. Mrs. Clemm, in a letter dated July 19, 1849, spoke of Poe's hallucinations and delusions. She said he was not drinking but deranged.

PRECEPTION AND COMPREHENSION

"Poe exaggerated freely. He appeared not to be able to distinguish between reality and what he desired to be true." He told of a trip to Europe in the cause of Greek liberty. He had periods of mental confusion when he was totally out of touch with reality.

We have no record of Poe's actual ability to recall but he talked of his memory store. "He seemed always to bear the memory of some controlling sorrow."

Poe pretended that he was abnormally clear in his mental processes. At the same time he realized that he was subject to psychotic episodes. He wrote: "I never was really insane except on occasions where my heart was touched."

Poe's judgment was never good. Mrs. Clemm would not trust him with money. His actions toward his employers and toward the numerous women with whom he engaged in hectic flirtations suggested insanity. He was engaged to at least two women at the same time. He was pleased when Mrs. Whitman broke her engagement with him in December, 1848. On September 5, 1849, he wrote to Mrs. Clemm telling her of his engagement to Elmira Royster Shelton and in the same letter he spoke of Mrs. Richmond and said he hoped that Mr. Richmond was dead.

INTERPRETATIVE SUMMARY

Poe never knew the kindness of a father and he was removed from a mother's love when he was only two years old. He was treated kindly during his childhood in the home of the Allan's but he was chided by his schoolmates because he was the son of actors. The stage was not in good repute in those days. He was led to believe that he would be legally adopted by Mr. Allan but this never came to pass. He remained conscious of his dependency on Mr. Allan but he quarreled violently with Mr. Allan who described him as having a "moody and unruly manner toward all the family" and a "complete absence of any sense of gratitude."

Young Poe came under the influence of the Negroes who were very superstitious. He had much contact with superstitions in Scotland. These influences probably had a lasting effect on him. The magical and phantastic always appealed to him.

It was probably with ulterior motives that Mr. Allan attacked the chastity of Poe's mother by questioning the paternity of Rosalie. This chagrined and distressed Poe, who was ambitious to live as a leader of society. He refused to study law and wanted to gain fame as a writer. In the first of his desires he

was woefully disappointed. His feeling of importance was injured on many occasions, especially when he was required to leave the university. His feeling of superiority was a compensatory reaction to his lowly beginning. He was alone among American writers. He died without knowing that fame was coming to him. Poe was always a disappointed man. He never found his place of adjustment and he regarded every position as a makeshift.

The tragic ending of Mrs. Stanard, whom Poe loved dearly, made a profound impression on him. Her death was the precipitating factor in his first depression. John MacKenzie, the foster brother of Rosalie, said: "I never saw in him as boy or man a sign of morbidness or melancholy, unless it was when Mrs. Stanard died."

REPRESSION

In Poe the mechanism of repression lacked strength. His unconscious mental levels were never well removed from the stream of consciousness. Although he was of the cycloid personality type he differed from the average cyclothyme in that respect. He did much autistic thinking. His imaginative power was colossal. He had no lesson to teach and he gave "little thought to the social fabric or to civilization."

He was never able to make a proper psychosexual adjustment. His marriage was one in name only. His young wife was congenial and he loved her as a sister. He made no effort to treat her as a sexual partner. Although he carried on flirtations he did not engage in extramarital sexual activities.

He developed an easily recognizable psychosis characterized by paranoid projections, personality changes, periods of activity alternating with periods of depression, and suicidal tendencies.

The New York Tribune of October 9, 1849, carried this news item written by Rev. Rufus Griswold: "Edgar Allan Poe is dead. He died in Baltimore the day before yesterday. This announcement will startle many, but few will be grieved by it. The poet was well known, personally or by reputation, in all this country; he had readers in England, and in several of the states in continental Europe, but he had no friends."

DIFFERENTIAL DIAGNOSIS

In considering the differential diagnosis of Poe's psychosis we think of schizophrenia, general paresis, alcoholic psychosis, and manic depressive psychosis.

Much of Poe's writings, his attraction by the bizarre and phantastic and his introversion, are suggestive of a splitting of the psyche. However, other features are sufficient to lead us to reject the diagnosis of dementia praecox. General paresis is eliminated by the fact that Poe did not have a rapid and progressive decline. His psychosis extended over a period of many years with a tendency to become more marked after 1842. The average life of an untreated paretic is two years after the beginning of symptoms. While there may be early remissions the progress downward is rapid and steady. In those days paresis was never treated. Poe was never suspected of having syphilis. The possibility that his mental disorder was the result of the abuse of alcohol must be considered. He started drinking early and became a confirmed dipsomaniac with long periods of abstinence intervening. As he grew older his periods of indulgence became more frequent. A very small amount of alcohol was sufficient to start him on a prolonged debauch. We recognize the fact that alcoholic psychoses occur but more frequently the abuse of alcohol is symptomatic of some underlying personality disorder. Poe's mental confusion, paranoid projections, fear of imaginary assassins, fabrications, untruthfulness, grandiose tendencies, and ambivalence may have been of alcoholic origin. All of these symptoms are encountered in alcoholic psychoses. However, we know that Poe had a depression at the age of fifteen at the time of the death of Mrs. Stanard and that while he was living more or less comfortably in Richmond in the position of editor of the *Southern Literary Messenger* and had won the respect and confidence of

his employer he became depressed and sought refuge in drink. His periods of alcoholic indulgence, especially before 1842, were practically always preceded by depressions. Poe wrote voluminously and all his manuscripts had to be handwritten. He revised and revised. He worked long and hard during his periods of activity. His psychotic episodes were probably more numerous than we know and they were essentially episodes of depression. Therefore, I offer the diagnosis of manic-depressive psychosis, with episodes of depression.

(The direct quotations used are from Joseph Wood Krutch and Hervey Allen; other sources of information are too numerous to mention).

GLAUCOMA *

By T. W. MOORE, M. D.
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GLAUCOMA may not be so foreign to a group of general surgeons as it at first glance appears. It was first described by a general surgeon, a Scotchman, Sir Wm. Mackenzie, who recognized the condition as being associated with hardness of the eyeball, and he said, increased intraocular contents. This was in 1830. In 1858 he advised tapping of the anterior or posterior chamber and about the same time Albrecht von Graefe proposed iridectomy which is today one of our most dependable methods of relieving the glaucomatous symptoms and lessening the tension. This, until that time, was regarded as impossible. Mackenzie became so imbued with the subject of eye diseases that he wrote quite an elaborate treatise thereon which was for years its leading and most voluminous textbook. The term glaucoma is probably of great antiquity, coming from the Greek word, glaukos, meaning green. It was used at the time of Hippocrates, but was applied to several forms of eye pathology, including cataracts, until Mackenzie made his observation.

That we may better appreciate the changes that take place when glaucoma develops we must remember that the eye is a very delicate, optical instrument and that in order that it may be maintained in a fairly stable shape and condition in its constant mobility, it is enveloped in a fairly rigid, very slightly elastic membrane, only distending seven-tenths of one per cent under the highest intraocular pressure produced by glaucoma. I am referring to the eye after early childhood, for at that time this membrane is more yielding.

The eyeball is filled with a varied content —the aqueous humor, quite fluid, the lens, a solid or semisolid body and the vitreous humor, a jelly-like fluid. In addition to these there is the blood content found in the blood vessels in the choroid, ciliary body, iris and other tissues. The aqueous humor is probably a filtrate or transudate from the ciliary body, or possibly, as has been claimed more recently, a dialysate. However, it is well for us to remember Friedenwald's observation when he says: "Those who have studied this problem in the past, have for the most part, divided themselves into opposing camps as

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exponents of the secretion theory or the dialysis theory; but as our inquiry progresses, we shall find that no unitary answer can be given to those questions and that thermodynamic and osmotic forces, hydrostatic forces and finally vital forces enter into the picture." Parenthetically, the same answer might be given to nearly every other physiological function of the body. Anyway, there is an aqueous humor formed within the eyeball and experiments on dogs have shown at about one cu. mm. per minute. With this amount of fluid being formed there must be an outlet. This is through the canal of Schlemm which has no openings into the anterior chamber, the aqueous humor filtering through the trabeculae (spaces of Fontana) of the pectinate ligament, which as you know are the bands of elastic tissue connecting the iris and the cornea. So you see that any change in the aqueous humor, such as debris from an injury or intraocular tumor or increase in its specific gravity, may interfere with its overflow or it may be entirely blocked by anything that pushes the iris against the cornea, such as adhesions from an injury, or its being pushed into contact with the cornea from tumor or other causes within the posterior recesses of the eyeball. It must leave this small cavity in some way and the theory that its outlet is obstructed or retarded and this produces the increased tension is probably correct.

STRUCTURAL INCREASE IN SIZE

Because the anterior chamber is nearly always encroached upon makes us think that increase in the size of the other structures such as the lens or vitreous humor may be a causative factor. We know that the lens does swell as we grow older, but it is fairly constant in size for long periods in persons of the same age. That the vitreous may swell and produce the increased tension would be the ideal clinical theory but so far there is not one iota of experimental evidence to confirm this. The anterior chamber is diminished, the lens and iris are usually pushed forward, all indicating that there is an increase in the size of the vitreous humor, with only one fact lacking and that is that it, the vitreous humor, does not enlarge.

Perhaps I should explain to you that the normal tension of the eyeball is from 15 to 30 mm. of mercury. You will note that it is higher than that of most tissues of the body where no specific secretory force may generate pressure in periods of activity. The amount of pressure is measured with a fair degree of accuracy by an instrument with a foot plate and a rod therein that moves only when the pressure is great enough to indent the cornea. There are a number of these instruments on the market, usually modifications of the original instrument invented by Schiotz; the McLean variation probably being the most simple to use and record.

INTRAOCULAR TENSION

The tension of the normal eye may be elevated by a constricting band about the neck, i. e., strangulation.

The same effect may be produced by lying upon a couch or table on your back and permitting the head to hang over the edge—extreme extension. Both of these are due to constricting and dilating the large veins of the neck.

Strong coffee will also raise intraocular tension, hence is always contraindicated in cases predisposed to glaucoma, for these conditions also apply when this exists.

The tension of the eyes is slightly greater between five and seven o'clock in the morning; so if a patient says that he is awakened in the early mornings with headache or pain in his eyeballs, one should be suspicious of increased tension and if it is found that this is running in the upper physiological limits, he should be hospitalized and the tension taken every four hours and particularly in the early morning hours.

It is interesting to note that those having eyes anatomically predisposed to glaucoma, may have an attack precipitated by worry or shock. One ophthalmologist said: "If a farmer comes into the office stating that his eye became painful and inflamed while his house or barn was burning, one will nearly

always find him having an attack of acute glaucoma."

This might also apply to injury or shock incidental to railroad work or travel.

I have not mentioned that glaucoma is a frequent concomitant of wounds of the eyeball (after they have healed); this applies to those made by the surgeon such as cataract operations, as well as the wounds due to accidental trauma.

You may be asking what are the anatomical conditions that predispose an eye to this affliction.

One authority says: "In certain eyes the anterior chamber is definitely more shallow than in others, with the result that the anterior surface of the iris lies nearer to the posterior surface of the cornea. This increases the angular acuity of the anterior chamber angle and reduces the size of the outlet of the aqueous humor. In the small eye of hyperopia the condition is met with more frequently than in other errors of refraction, and it is in this condition that incompensated glaucoma is most common."

DEGREE OF GLAUCOMA

Glaucoma is designated as primary or secondary, according to whether it is or is not preceded by some known ocular disease. If no ascertainable disease of the eye exists it is primary. If there is some intraocular disease it is secondary. It is also classified as acute or chronic. Nearly all cases of acute glaucoma are primary.

It is very essential that the acute and chronic variations be differentiated for in the acute affection the call for operation is just as urgent as in strangulated hernia or acute appendicitis.

If I may beg your indulgence I will briefly mention some important diagnostic points. The acute form is too often mistaken for an attack of neuralgia or biliousness on account of the severe headache which the patient frequently does not limit to the eye or eyes. It is characterized by intense pain, sudden onset, dilated, fixed pupils, which are often oval with the long axis being the vertical meridian, a shallow anterior chamber, and often anesthesia of the cornea. The patient does not seem to notice when you touch the cornea with a wisp of cotton or other object. The eyeball is exquisitely painful to the slightest pressure through the eyelids, the conjunctivæ are much inflamed, often swollen, as sometimes are the eyelids. There is rapid and great loss of vision, especially in the peripheral fields which the patient may demonstrate unaided by simply holding his hand slightly to one side of the direct line of vision. He also complains of a halo when looking at lights. The media are cloudy so that the fundus cannot be seen when using the ophthalmoscope.

CHRONIC GLAUCOMA

In chronic glaucoma there is no, or only slight, redness of the eyeball; the pupil reacts sluggishly to light and is not necessarily dilated, the anterior chamber may be of normal depth, the media may remain clear so that an ophthalmoscopic picture of the fundus may be had, showing a cupping of the disc. There is often frequent changing of glasses, particularly is this true in requiring stronger reading lenses at short intervals, i. e., an increase in presbyopia. The narrowing of the visual field as taken by the perimeter and an increase in the size of the normal blind spot especially if this normally small area is extended as a narrow cresentic band either above or below the fixation point are usually found. Vision both near and far tends to deteriorate, although it may be many years before it is entirely lost. "Frequently there is a history of transient but repeated attacks of loss of vision, rainbow rings seen round a distant light; throbbing in the eyeball, headache and neuralgia.

"The palliative measures are the usual hygienic rules, such as avoidance of stimulants and regulation of diet, if gout be present; the avoidance of anything likely to cause congestion of the eyes." The daily use of a one per cent solution of pilocarpine should be followed religiously; also frequent examination of the tension. Once or twice a month the eyes should be carefully checked.

Iridectomy is not so satisfactory as in acute glaucoma. Here an opening must be made into the sclera that must remain patulous, such as the Elliott trephine operation where a small wound is made into the eyeball at the junction of the cornea and sclera after dissecting off the conjunctiva in the form of a flap, the greatest care being taken not to perforate this flap. After the trephine is made, the trephine flap removed and an iridectomy done through the trephine wound, the conjunctival flap is sutured back into place and the content of the aqueous chamber filters out under the conjunctiva where it is absorbed. This is frequently most satisfactory. A patient of mine, now after ten years, still has vision of 20/40, just what it was when I operated. Another very popular operation and very successful in many hands is iridodenesis, where after preparing the conjunctival flap as in the trephine operation, the anterior chamber is entered, the iris pulled out and sectioned and the two arms, or more recently, one arm left out of the scleral wound, and the conjunctival flap stitched into place, thus producing a filtering process as in the trephine operation.

These operations are often most gratifying for many years. Their worst failing is that sooner or later the eye is apt to become infected through them and then of course is lost.

True, there are many cases that seem to develop some compensation for the increased tension where it is of low degree and maintain their sight with very little loss for many years but they must be very carefully watched and I must remind you that no place in medicine is a finer discrimination needed, and too often must we, in the end, have only the consolation of the first aphorism of Hippocrates: "Experience is fallacious and judgment difficult."

CASE REPORT

I am going to report one case to you. One evening after five o'clock I saw a man being lead into my office. His stumbling gait showed he had impaired vision, particularly peripheral vision. Upon examination we found a man of 30, who on the Sunday before (this was Thursday, June 16, 1938) had attended a celebration of the opening of the new dam at Eureka below Gallipolis. He had felt fine that day, having rowed a boat across the river three times during the afternoon, although during that time he had felt slight discomfort in his left eye. He worked at his job as a WPA worker Monday forenoon, but his eyes became so painful that he laid off in the afternoon. His pain became intense in both eyes and he also noticed failing vision. He was unable to obtain any relief until I saw him, when the tension was 55 mm. of mercury in the right eye, and 74 in the left. With eserine and pantocaine the tension was reduced 20 mm. in each eye. The following morning in consultation with Dr. Hoitash, a cyclodialysis was performed on the left eye. The tension went to normal but that evening it again went to 55 mm. in this eye. The next morning we performed a cyclodialysis on the right eye, after which the patient developed a keratitis of this eye possibly due to trauma in performing the cyclodialysis; however, the tension here remained low. I now performed an iridectomy on the left eye.

This was a classical picture of acute glaucoma of both eyes. Both much inflamed with some chemosis of the conjunctivæ and some swelling of the eyelids of the left. Both pupils were dilated and fixed. The media were so cloudy that it was impossible to see any of the deeper structures, both eyeballs were exquisitely sensitive to touch and in the left there was marked anesthesia of the cornea. We were unable to elicit any history of any illness or discomfort except a physician had prescribed for some sinus condition two weeks before. We were unable to find any evidence of infected sinuses, so this pain may have been ocular. This is very young for an attack of glaucoma. The patient, at the time he left the hospital, had some useful vision in each eye but this was not carefully measured.

Examination (August 29) shows, with correcting lenses:

R. E. V.	20/20	T. 23
L. E. V.	20/100	T. 23

The media and fundus of the right eye are normal, only slight roughness of Descemet's membrane. In the left eye the media are slightly hazy and there is marked cupping of the disc; both pupils are fixed and about three-fourths dilated. The right eye requires a plus 1.25 add for near with which he reads 1 J. at 14 inches. The field of the right eye is normal, in the left it is about one-half con-

tracted with a characteristic glaucomatous step in it. In neither eye is there an enlargement of the blind spot.

Examination on October 18 confirmed the above and glasses were prescribed. Deposits had formed on the anterior capsule of left eye and the disc had developed a marked pallor-atrophy.

There is only one known disease that produces glaucoma. That is epidemic dropsy. This is a disease which is common in Bengal and occurs only among rice eaters. The etiology is not definitely known but is generally agreed that it is different from beriberi. Both diseases belong to a toxic group in which the three principal signs are edema, hypertrophy with dilatation of the heart, and peripheral neuritis. In epidemic dropsy peripheral neuritis is absent as a rule. The glaucoma produced is of the primary non-inflammatory type and is due to toxins which contain bodies of the histamine group.

I am going to add an observation that, it seems to me, may be of value to you as diagnosticians and that is that in coma due to diabetes there is a hypotension—a lowering of the intraocular pressure and this is not found in other forms of coma such as uremia or apoplexy. In modern hospitals which are now equipped with ocular tonometers this may aid in your cases of coma of unknown origin.

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PROBLEMS RELATING TO INDIGENT AND LOW INCOME MEDICAL CASES IN WEST VIRGINIA *

By D. A. MacGREGOR, M. D.
Wheeling, West Virginia

OUR executive secretary has asked me to tell you something about the work of the newly created Medical Service Committee. Most of you know that the Low Cost Study Committee which functioned very energetically during 1938 and 1939 rendered its final report at our annual meeting last July. At that time the Committee on Medical Service was created with the idea that it should continue the work of the Low Cost Study Committee. No definite plan for the prepayment of sickness insurance was submitted by the Low Cost Study Committee. At a matter of fact, their investigation led them to believe that the majority of the members of our Association are opposed to prepayment sickness insurance on a state-wide basis. At the same time, there are very few of our members indeed who do not recognize the necessity for some practical plan which will insure adequate medical care for the indigent and the low income group.

The Department of Public Assistance, as organized in the State of West Virginia has functioned with a fair degree of efficiency in rendering medical aid to indigents, but we recognize the fact that the coverage of this field has never been entirely adequate. The perennial lack of sufficient funds and the unavoidable amount of red tape in connection with its administration are two of the more serious drawbacks. On many occasions the organized medical profession has been criticized by would-be reformers who point with scorn to the fact that the medical profession does not have a practical plan for the solution of this problem. True enough, but we are investigating it in a thorough and conscientious manner which should lead us eventually to the proper solution. In the last seven years, at least three hundred counties in the

*Dr. MacGregor, Medical Service Committee chairman, presented the above report at the Annual Conference of County Society Secretaries and Presidents at Charleston on January 6, 1940.

United States have experimented with special plans for the care of the indigent sick.

Experiments in voluntary sickness insurance are being carried out in at least a dozen different states. One reason why it is difficult to devise a plan for the prepayment of medical insurance is the fact that there are no dependable actuarial figures available. For that reason we are not able to predetermine the actual cost of such service. In previous prepayment plans it has never been considered necessary to safeguard the quality of the medical service available. The ideal plan we would like to set up now will guarantee an adequate amount of first-class service. Furthermore, there is no way of estimating how great will be the increased demand for medical service. We all know perfectly well that when medical service is freely available there will always be an increased demand for such service. Safeguards against this unwarranted increase have been embodied in several different state plans. For instance, in California, the subscriber is asked to pay for the first two calls in any illness before his prepayment insurance becomes effective. Another matter of some concern in connection with any prepayment plan is the legal status of the venture inasmuch as it may be construed as an invasion of the insurance field. In certain states enabling legislation has been enacted in order to protect the proposed plans against unpleasant legal complications.

The medical profession has sacrificed an enormous amount of time and money in developing the many different plans. All of them are frankly experimental. Their founders fully expect to see them expanded, altered or abolished as may seem desirable after a thorough trial. So far the results have not been encouraging. Even the California plan which is probably the most far-reaching and ambitious of all of the state plans has not had smooth sailing. Many California doctors think it will not be a practical plan from the financial standpoint. It will take many months of trial to settle the question.

The Committee on Medical Service is not considering any plan for West Virginia at the present time. The attitude of the committee is that no plan should be recommended until it has been in successful operation in some other state for at least a year. At the last meeting of the Association's House of Delegates, it was agreed to permit any county to experiment with a plan for prepayment medical insurance under the supervision and guidance of the Medical Service Committee. Our committee is not promoting this kind of sickness insurance at the present time. The only endorsement which we have given so far has been for non-profit community hospital insurance plans which reserve the right of free choice of hospitals and doctors.

Last fall the Medical Service Committee made a survey by questionnaire of most of the hospitals doing so-called list practice in our state. We experienced the most cordial cooperation from the heads of these institutions and secured some very interesting information with respect to list hospital practice. The magnitude of list practice surprised most of the members of the committee. The hospitals responding to our questionnaire have nearly two hundred thousand persons on their lists. In other words, one out of every eight people in the State of West Virginia is registered on a hospital list.

In compiling the information obtained from the questionnaire, two unfavorable observations were made to which I wish to call your attention: 1. Four or more of the hospitals reporting accept small groups or individuals in competitive areas—that is they do not limit their lists to the mining camps. 2. Two or more of the hospitals evade the compensation law with respect to the payment of hospital bills for industrial accidents through the compensation department.

With respect to the first observation, the Committee on Medical Service believes that list practice is the most practical method thus far devised of giving adequate medical and hospital service to isolated groups of our population such as the mining camp groups scattered through the rugged hills of West

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Virginia. On the other hand our committee feels that list hospital practice in larger communities, in the so-called competitive areas where there are physicians attempting to practice independently, is a vicious type of practice and should be condemned. It shuts the door in the face of any physician who is not affiliated with the list hospital staff and yet desires to practice in the community. Patients are not free to choose such a physician for an illness requiring hospitalization. The doctors connected with the list hospitals have a strangle hold on all the medical work in the community. This type of practice is not widespread. There are only a few instances in our state. We believe the doctors involved are fair and honest men who have begun this type of practice unwittingly or on account of outside pressure. Most of them would be glad to be out of it. With this idea in mind, the Council of the West Virginia State Medical Association has authorized our committee to send a letter to each county society secretary, calling attention to the fact that both the Council and the House of Delegates have gone on record as being opposed to list practice in competitive areas unless provision is made for free choice of both physician and hospital. It is essential for us to clean this up.

With respect to the other observation mentioned above, it appears that nearly all the hospitals are rendering bills to the State Compensation Department for services rendered in connection with the care of industrial injuries. In a few instances, however, it is found that there is a private agreement between the employer of labor and the hospital, whereby the employer pays to the hospital twenty or twenty-five cents per month per employee with the understanding that no bills will be rendered to the compensation department for hospital service.

The amended compensation law of 1935 made it mandatory that payment for the medical and hospital care of compensable injuries be made out of the compensation fund, *but*, no penalty for violation is provided in the law. It is self evident that non-compliance with the law is a violation of both the letter and the spirit. We believe our compensation commissioner could force compliance with the law even though there is no penalty provided. His office is highly respected by employers of labor who would not willingly incur his displeasure.

Only a few hospitals in our state have private agreements with employers in contravention of the spirit of the compensation act. The hospital executives who have entered into these agreements have done so because they have felt obliged to do so to accommodate the employers. If a stipulated sum per month per employee is paid to the hospital by an employer, the employer's compensation rating with respect to medical care cost is not affected in any degree by the number of hospital accident cases. At least to some extent, such a plan fails to encourage employment of safety measures for the benefit of workers.

A still more important reason why employers should not pay a stipulated amount per man is that this practice makes an injured employee an unwelcome hospital patient who brings in no hospital revenue. The injured employee whose hospital bill is paid from compensation funds is an asset to the hospital, a revenue producer on the same basis as any other paying private patient. Not so with the prepaid patient. He is a liability, and the longer he remains in the hospital the more of a liability he becomes. Every hospital owner may say there is no differentiation in his hospital, but the system is still wrong. That's why the amended compensation law was enacted; the legislature knew the system was wrong.

We have discussed this matter with the heads of several hospitals who abandoned their former methods in 1935 and have since then presented bills to the compensation department in compliance with the terms of the compensation act. They feel as we do that a frank discussion between employers and the hospital executives in the few instances where this practice still prevails, would result in the abandonment of private

agreements and the adoption of the principal of paying through the compensation department. If all hospital bills for industrial accident cases are paid through the compensation fund the hospitals will fare somewhat better, the employers will not lose a very great deal of money and the employees will be assured of all of their rights and privileges as contemplated by the compensation act. Council has authorized our committee to write a letter to every hospital in the state and to ask them to do everything in their power to do away with private agreements for treating compensable injuries and to handle industrial injuries through the compensation department in accordance with the spirit of the law. This irregularity must be cleaned up.

There is another matter which should be mentioned in this report. It pertains to a new method of payment of hospital bills and medical bills for the so-called "classified clients" of the Department of Public Assistance. The classified groups are those such as the aged, the blind and the crippled, as differentiated from the clients on general relief. It has been the custom in the past to provide medical and hospital care for all public assistance clients, classified or unclassified, from the general county relief funds. Except for one gorgeous month when we were given a green light just to find out how much complete and satisfactory relief in Ohio county would cost, we have never had sufficient money in the general relief fund to take care of indigents in the magnanimous manner in which we would like to have it done. No doubt the experience in other counties has been similar to that in Ohio county. This new plan which has been worked out largely through the office of our executive secretary allows us to dip a little deeper into the Federal pocketbook. The plan devised calls for an increase in the direct relief payments to those clients who have incurred hospital or medical bills. Through close supervision it is arranged that the amount of the increase over the usual monthly disbursement is applied by the client to the gradual liquidation of the hospital and medical bills. It is readily seen that an increase of $10 per month will wipe out a $50 medical charge in the course of five months. The Federal funds are available to match state funds only when these relief payments are paid directly to clients on the classified lists. Strange to say these same Federal funds would not be available for payment directly to the hospitals or the doctors. By paying the client a little extra money each month and then taking it away from him and giving it to the hospital or the doctor we can get half of the money required for this service from the Federal government. It has been estimated by our secretary that by this little bit of financial and political shenannigan, an increased amount of Federal funds to the extent of about $60,000 per year will be made available for medical and hospital service. When we are spending Federal money we have the pleasant illusion that it is a gift. So far as West Virginia is concerned this $60,000 is something like a gift, but no doubt we are helping to pay for similar gifts for other states. Anyway the new plan went into effect December 1, 1939, and it should help the doctors and the hospitals collect some of their bills from classified relief clients in the future.

In closing this report from the Medical Service Committee, I want to say that no one of us on the committee feels that he knows very much about the big problems with which we are trying to cope. When we consider how many different plans for the care of the indigent, the low income group, and even for the whole population, have been tried and abandoned, and when we consider that the problem is being attacked in a hundred different ways in every part of our country and that there is no unanimity of opinion in regard to the proper method of procedure, the West Virginia Medical Service Committee feels very humble indeed. We deem it wise and prudent to sit on the sidelines, study the experiments which are being made and, if possible, select for ourselves some practical plan which has proven successful after a long trial elsewhere.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Spontaneous Pneumothorax

Older writers, having observed that spontaneous pneumothorax was sometimes followed by arrest of pulmonary tuberculosis, were tempted to regard this phenomenon as one of nature's haphazard attempts to cure. The serious results, however, far outweigh the occasional beneficial results—spontaneous pneumothorax is a traumatic accident to be avoided if possible. Recent studies directed toward the underlying cause of spontaneous pneumothorax are reawakening interest in the subject.

Robert Charr reports 10 cases of fatal spontaneous pneumothorax. All cases were in the third and fourth decades of life; six were males and four females. Eight had pulmonary tuberculosis and two anthracosilicosis.

"In all, the onset of the pneumothorax was sudden, and it occurred while the patients were in bed. In none of the cases severe coughing sneezing or any other form of physical exertion preceded the fatal accident. The chief complaints were dyspnea and pain in the same side of the chest as the pneumothorax. All showed cyanosis, clammy skin, weak pulse, dry mucous membrane of the mouth with thirst and apprehension of impending death."

At necropsy, it was found that in seven of the cases the pulmonary rupture was in the midaxillary aspect of the upper lobe and in three it was on the anterior surface about the midclavicular line. In two of the latter group the rupture was in the upper lobe and in one in the lower lobe. In all the perforation was either in the front or the axillary region of the lungs—in none on the posterior surface of the lung.

"In three cases with the rupture on the anterior surface of the lungs, the perforation took place through the center of large and acutely caseous tuberculous nodules, measuring about 1.5 cm. in diameter. The visceral pleura covering them was thin and transparent without adhesions to the adjacent parietal pleura. Following the ruptures deeper into the lungs led into irregularly shaped and acute cavities in the center of caseous consolidation. The cavities varied in size and were located in the anterior half of the lungs. Projecting into the cavities were several stumps of bronchi and many cord-like structures criss-crossing the cavities, which on section proved to be the remnants of lung tissues. Excursion of the air through these bronchial stumps was free. When the air was rapidly pumped into the main bronchi, the perforated visceral pleura covering the caseous nodules ballooned out remarkably. The surface distribution of the caseous tubercles in these three cases was interesting. Practically all the acutely caseous tubercles were on the anterior portions of the lungs. The posterior parts showed principally congestion and areas of gelatinous pneumonia.

"In seven cases with the ruptures in the axillary region, the character of the ruptures differed from those already described. In none did the perforation take place through the center of caseous tuberculous nodules as in the previous cases. There was much pleural thickening about the ruptures. The tuberculosis which was present in all excepting two anthracosilicotic cases was chronic in form with considerable fibrosis throughout the lungs. Although there were scattered caseous tubercles, many of them showed, on histological examination, fibrous capsules surrounding them. Furthermore none of these cases showed superficial tubercles as acutely as those in the first three cases."

It seems that the immediate cause of the pulmonary rupture in these seven cases may have been tugging on the pleural adhesions. There is considerable vertical excursion of the lungs due to the greater depth of the costophrenic angle at that point. The sliding motion of the lung upon the inner surface of the thorax is probably most marked along the axillary aspect of the chest, which, if that is the case, accounts for the marked tugging movement on the pleural adhesions along the axillary region.

The absence of pulmonary rupture on the posterior aspect of the lungs confirms the belief that the cause of spontaneous pneumothorax is largely a mechanical one. The front and the axillary portions of the thorax move more in respiration than the posterior parts where the ribs are attached to the spinal column. These factors of chest movement may be more pronounced when a person lies on his back.

The left side is more frequently involved than the right, the percentage being approximately 60 on the left and 40 on the right. Various theories have been advanced to account for left-sided preponderance but there seems to be no doubt that

the heart action produces an additional pulmonary mobility on the left side.

Spontaneous pneumothorax occurs in diseases other than tuberculosis. In the author's present series, two cases had far advanced anthracosilicosis uncomplicated by tuberculosis. In one of these there were large emphysematous blebs in the midaxillary region of the upper lobes, rupture of which very likely produced the pneumothorax. Over these blebs the visceral pleura was considerably thickened, but the microscopical examination of the walls of the blebs showed extreme thinning of the elastic layer and at several points there was an actual breach in the continuity of the elastic lamina. In the other case the perforation of the lung was due to an extension of a cavity located in the center of a large anthracosilicotic mass in the right upper lobe.

Morphological changes of shock and related capillary phenomena were noted. These changes were marked diffuse congestion of capillaries and venules, especially in the lungs, liver and kidneys. Many of the alveolar spaces were filled with edematous fluid, and the capillaries were filled with blood. Supportive treatment usually employed in shock, in addition to withdrawal of air from the pleural space, which, of course, is most important, may be of value. Wrapping the patient with blankets, giving hot drink, and oxygen and intravenous administration of fluid may be helpful, though Moon has warned against too much heat producing peripheral vasodilatation and loss of body fluid in the form of perspiration, which may aggravate shock.

Spontaneous Pneumothorax, Robert Charr, Amer. Rev. of Tuber., Vol. XL, No. 5, Nov., 1939.

The Red Cross

The international bond of union provided by the Red Cross in time of war is emphasized by a special Finland correspondent in a letter in *The Journal of the American Medical Association* for January 20 which declares:

"It is perhaps through the Red Cross that Finland has received more moral and material foreign help than through any other source.

"The generosity with which the national Red Cross societies of other countries have come to the aid of Finland's Red Cross is almost overwhelming. The news that Red Cross ambulances are on their way to Finland has also proved most cheering."

TWENTY-FIVE YEARS AGO

(Taken from the February, 1915 issue of the West Virginia Medical Journal.)

Original articles published were by Dr. A. P. Butt, Davis; Dr. Thomas E. Perry, Bluefield, and Dr. J. E. Cannaday, Charleston.

From the minutes of the Barbour-Randolph-Tucker Society's January meeting: "Dr. Irons read a paper on 'The Smallpox Problem.' This is more and more a problem in West Virginia, as it is becoming so prevalent, the people getting so careless, quarantine so difficult of enforcement, and the expense to the State, in its attempts to control and care for the sick and immunize the well, is so great. There should also be some law enacted to suitably punish the meddlesome 'wiseacres' who infest every community and pretend to know more of the diagnosis of every disease than the best physician in the country, and thereby obstruct health measures and become a menace to the community."

The county court of Tyler county has recently appointed the following physicians to treat all indigent cases and cases of infectious disease in the districts named: Centerville, Dr. E. B. Conaway; Ellsworth, Dr. Paul Engel; Lincoln, Dr. W. H. Young; Meade, Dr. J. A. Gartlan; McElroy, Dr. J. A. Baker; Union, Dr. Joseph Eddy.

In the list of members, published in its entirety in the February, 1915 JOURNAL, the total number was eight hundred and twenty-four.

The new public health bill, which was prepared under the direction of the State Board of Health, and which has many of the excellent features contained in the health laws of our most progressive states, is meeting with great objection in the legislature. The coal operators have combined against it because their inflamed imaginations see in it powers that do not reside there which they think may be enforced to cripple their industry. The financial condition of the state is offered as a reasonable excuse for avoiding any enactment that may entail increased taxation. The bill has been amended so as materially to reduce the cost of its administration, but this has been done necessarily at a cost of its efficiency also. It seems doubtful that it will pass, although it has the earnest support of Governor Hatfield.

President's Page

I desire to dedicate this month's page to our County Medical Society Secretaries and Presidents, the men who comprise the backbone of the organized medical profession. It was my good fortune to attend the annual Secretaries and Presidents Conference in Charleston on January 6 and, after seeing our county officials in action for a full day, I feel that the welfare of our component groups is in excellent hands. The keen and intelligent interest manifested by these county society officials in the conference discussions provided real inspiration.

One of the most interesting matters presented before the conference was the report of Dr. D. A. MacGregor, chairman of the new Association's Medical Service Committee. Speaking on hospital "list" practice, Dr. MacGregor said in effect that there would be very little complaint against the list system if the doctors and hospitals engaged in the system would forego its abuses. He referred particularly to the continued evasion of the Workman's Compensation Law by some of our hospitals, and of the prevalence of hospital list contracts in two southern West Virginia cities where physicians were engaged in the private practice of medicine.

While the list problem is within the special province of our Medical Service Committee, I wish to record myself as being in complete agreement with the position which this committee has taken. If these abuses do exist, they should be cleaned up by those who are interested in maintaining the present list system. Regardless of whatever merit the system may have, it will remain under fire so long as abuses are allowed to continue. I believe every president and secretary at the conference felt that list practice should be confined to isolated non-competitive areas and that all compensable injuries should be taken care of through the Workman's Compensation Department.

Another matter of great conference interest was the presentation of a five year program of graduate education in West Virginia. A preliminary outline of the proposed program was given by the Committee on Graduate Education and called for the eventual employment of a full-time director of graduate education by the State Association. While this is a most ambitious undertaking, we have confidence that much progress along this line will be made within the next few years.

Again may I thank the county society presidents and secretaries for their attendance and participation in the annual conference, and the Kanawha Medical Society for the hospitable entertainment.

Frank V. Langfitt

President.

West Virginia Medical Journal

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THE PRESIDENT'S HOSPITAL PROGRAM

President Roosevelt has recently announced a plan for construction by the Federal Government of hospitals in areas in which the local communities cannot furnish funds for construction, equipment and maintenance. The program envisions the construction and equipment of approximately fifty hospitals of fireproof materials. The size will vary from fifty to one hundred beds, dependent upon the needs of the community to be served. The total Federal expenditure will not exceed ten million dollars.

As we understand it, the local community desiring a hospital will present its request and demonstrate its need. The request is to be accompanied by proof of ability to administer and maintain the institution after it has been built and equipped by the federal funds. The request is to be approved by the local medical society, the local hospital organization, the state health department and the county governmental agency which is to guarantee the funds for maintenance.

At the White House meeting held January 10, to which the president invited the "Committee of Seven" and representatives of the American, Catholic and Protestant hospital associations, one got the impression that the president does not favor the enactment of legislation which would translate into action the National Health Program, and that the Wagner Health Bill is, in his judgment, unwise in that it is too cumbersome, too expansive, and too expensive. Also one got the impression that the president would oppose any Federal subsidy for medical treatment of the individual in the local communities.

Prior to the conference with the president, the "Committee of Seven" and the representatives of the hospital associations met and enunciated a set of principles which it was felt embodied the provisions enacted by the House of Delegates of the American Medical Association and would safeguard the interests of the taxpayers, the public, the healing professions and the existing hospitals. These basic principles, seven in number, are as follows:

1. Hospitals to be built only where need for same can be shown. Advisory consultation in the determination of such need to be given by the state medical and hospital associations, the state health department and the county judges or officials of the counties in which such hospital services are proposed.

2. Size of hospital to be commensurate with the needs of the community and the ability of the latter to support it.

3. Means for the maintenance and upkeep of such hospitals rank in importance equal to that of construction.

4. Since the important objective of the program is the service it can render, hospital construction and administration, equipment, staff and personnel should meet the standards which the American Medical Association, the American College of Surgeons and the hospital associations regard as minimal for rendering such service in the various localities. Where needed, since highly specialized facilities and personnel cannot be made available in all places, affiliation with larger hospitals or hospital centers to be had to the end that highly specialized services, diagnostic and therapeutic, be made available to all.

5. Maintenance of a standard of professional and hospital service that will keep it efficient and prove attractive to qualified men and women as a career.

6. Utilization of existing facilities where possible: Under no circumstances should the program be allowed to develop into competition with the voluntary hospitals but should

rather foster cooperation between the two groups.

7. Many small communities can be better served by the utilization of bed vacancies in available existing institutions than by the construction of new hospitals, transportation and per diem expense to be borne by state and/or county funds. Where state and/or county funds cannot be provided, expense to be met by, and to be dispensed by, local agencies. Ambulance service and good roads will permit this type of service to operate safely, efficiently and economically in communities not financially able to support a hospital.

We believe there is much to be commended in such a program; certainly if those who carry it out follow the president's ideas. It is not too expensive; the principles of demonstrated need, local responsibility and local administration are adhered to; hospital service will be made available to residents of communities where such facilities are now either inadequate or entirely lacking; such programs of construction will not be developed in competition with existing hospitals, and the local communities will be stimulated to determine their own needs and to meet their own obligations, a vital principle of democracy established by the founding fathers of the American Republic. Certainly the medical profession can support such a program.

A PRESIDENT'S RESPONSIBILITIES

The duties and responsibilities of a county medical society president are many. In accepting his responsibility as president of the Cabell County Medical Society, Dr. William F. Beckner made a few well chosen remarks on the evening of January 11, following his installation. Dr. Beckner's brief talk was so timely and to the point that we publish his remarks below. Said Dr. Beckner:

It is a great honor and pleasure to be called to serve as president of a county medical society. With the honor and pleasure comes responsibility and duty. I promise you I will do my level best, with your advice and help, to meet these obligations and duties. I invite constructive criticism and help at all times. In union and cooperation there is strength. We must have these if we are to continue to make progress.

Health and medical service, for the first time, in our country is in danger of being regimented to political and governmental control. European experience has demonstrated that the dangers of this type of medicine far outweigh any good points it may have.

The American physician, the American medical profession, operating in a land of democracy not dictated to by political influence, has given to its people, and to all people, the best medicine that civilization has ever known. Why change it; hold fast and cherish that which is good. Let us continue to stick to the objectives and purpose of our own organized medicine. Let us justify our continued existence as a free and unhampered profession by rededicating ourselves to the principles and precepts of those who have passed this heritage on to us.

I feel that we are largely responsible for the spot in which we find ourselves relative to political and governmental control. We have talked about and said so many derogatory things about our fellow practitioner and practices which are being done that the public is beginning to wonder if there isn't a great deal of truth in what is said. Consequently the people lose faith and confidence in the profession as a whole.

It used to be that a family or patient would wait hours, even days, to obtain the services of their family physician, so great was their confidence and faith in him. Those days are gone forever. Now when you are called, if you are not Johnny-on-the-spot, pronto they promptly call someone else, and their confidence in the profession can only be as great as it is in the individual physician.

If you know that your fellow physician is practicing the wrong kind, or unethical med-

icine, do not air it to the public; bring your complaints here and let the society as a whole decide the kind and amount, if any, of publicity to be given such practices. This will have much more effect and will serve to improve and control medical practice.

It is so easy to misinterpret the acts of the other fellow and so human to believe the worst about our fellow practitioner.

If we are to win this fight we must stick together, and give to our patients and our people the kind of medicine they have a right to expect.

ABOUT THE DUES

With the thought that it may aid the county secretaries, we mention to all Association members the matter of 1940 dues. If you have not paid your 1940 dues, and if you want to be helpful to your county secretary, send him your check so he can cross your name from his collection list. Dues are payable on January first. Members whose dues are not paid by April first are dropped from the roster.

For about the fifth consecutive year, Taylor was the first county society to report all dues paid up. A number of other county societies are nearing the 100 per cent paid up class. Let us get this matter of 1940 dues behind us so we can all concentrate on further promoting the welfare of organized medicine in West Virginia.

A LEADER PASSES

Fifty years of service to his profession and to the men and women who were his patients is the heritage left by Dr. C. A. Ray, who died on the early morning of January twenty-first. As a past president of the Association and as a past editor of this publication, the career of this beloved and kindly "family physician" will go down in the history of his profession as a guiding star to future generations of medical men.

As a man of unfaltering courage, of understanding, and of rare good humor, Dr. Ray exemplified all of the finest attributes of a noble profession. The Association has lost one of its truly great. To his three sons, and to his host of friends and associates, his JOURNAL extends deepest sympathy.

Spread of Poliomyelitis

The possibility that poliomyelitis (infantile paralysis) may be spread by means of sewage in which the causative organism of the disease is present is suggested by experiments summarized in *The Journal of the American Medical Association* for January 13.

"During a recent poliomyelitis epidemic in Charleston, S. C.," *The Journal* says, "numerous samples of municipal sewage were collected by J. R. Paul, M.D.; J. D. Trask, M.D., and C. S. Culotta, M.D., from various sites throughout the city, particular attention being paid to one pumping station. Here the sewage came from parts of the city in which most of the cases of poliomyelitis had occurred.

"Eight liter samples of this sewage were allowed to stand in a tall glass bottle for twenty-four hours, with ice packed about the base of the bottle most of the time. At the end of two hours and twenty-four hours samples of the resulting sediment were drawn off from each bottle and about 10 per cent ether was added to serve as a bacteria-killing agent. The etherized sediment was then sent to New Haven, Conn., where doses of each sample were inoculated into the abdominal cavity of monkeys. Of the six monkeys thus far inoculated, four have died or been killed after developing acute inflammation of the abdominal wall. Evidently 10 per cent ether is not an effective agent for killing bacteria. Two of the monkeys, however, did not develop a local bacterial infection but came down with typical poliomyelitis after an incubation period of about eight days. Typical spinal cord lesions were demonstrated at necropsy in these monkeys. Successful transmission of poliomyelitis to a second monkey was accomplished by cord to cord inoculation. The authors conclude from this evidence that poliomyelitis virus was present in effective concentration in at least two samples of municipal sewage. Whether or not the presence of active virus in this sewage was a direct or indirect cause of the epidemic was not determined."

Obituaries

Charles Andrew Ray, M. D.

The West Virginia State Medical Association lost one of its most beloved and outstanding members with the death of Dr. C. A. Ray, Charleston, on the morning of January 21, 1940. Death was attributed to a heart attack. Although aware of his condition for more than a year, Dr. Ray continued in active work until the day before his demise. He was 75 years of age, a past president of the Association, and a past editor of the WEST VIRGINIA MEDICAL JOURNAL.

Dr. Ray was born in Kanawha county on May 14, 1864, and received his early education there. In 1887 he graduated from the College of Physicians and Surgeons, Baltimore, and followed with interneship at Baltimore City Hospital. He later took postgraduate work at Johns Hopkins and New York Polyclinic. He then practiced at Montgomery, Winifrede, Huntington and Leewood before permanently locating in Charleston in 1917.

Dr. Ray was a member of the Kanawha Medical Society for 50 years and served as president in 1925. In 1927 he served as editor of the JOURNAL and in 1928 as Association president. He continued on the editorial staff of the JOURNAL until two years ago, when upon his voluntary retirement he was presented a silver tray for outstanding service at the White Sulphur Springs meeting last July. Dr. Ray was president of the county court of Kanawha county at the time of his death.

Dr. Ray rarely missed an annual state meeting and it was while attending the Clarksburg meeting with Dr. Ray three years ago that Mrs. Ray died from a heart attack. Three sons survive, including John V. Ray of Charleston, former attorney for the Association. Funeral services were held on January 23 and Dr. Ray was buried in the family plot on his farm near Sissonsville.

Milton H. Brown, M. D.

Dr. Milton H. Brown, prominent Morgantown physician, died suddenly in his office on the afternoon of January 10, 1940, at the age of 71 years. Apparently in good health, Dr. Brown was keeping his regular office hours when he was stricken. Death was attributed to coronary thrombosis.

Dr. Brown was a native of Morgantown and had practiced there for 39 years. He was graduated from Baltimore Medical College in 1893 and after practicing one year in Fairmont and seven years at Arnettsville, he located in Morgantown in 1900.

Dr. Brown is survived by his widow and two daughters, Mrs. Ernest H. Gilbert and Mrs. Burchinal Baker of Morgantown. Three brothers, one sister and two grandchildren also survive.

Karl C. Pritchard, M. D.

Dr. Karl C. Pritchard of Huntington, died at a hospital there on January 5 from influenzal pneumonia at the age of 60 years. He was widely known throughout the Cabell county section where he had been in active practice for the past 32 years.

Dr. Pritchard was born at Catlettsburg, Kentucky, received his academic degree from Lafayette College and graduated from Jefferson Medical College in 1906. After an interneship at Easton, Pennsylvania, he opened offices in Huntington where he built up an extensive general practice. Dr. Pritchard left Huntington during the World War to serve as captain in the Army Medical Corps. He took an active interest in the affairs of the Cabell County Medical Society and served for several years as its treasurer.

Raymond E. Bailey, M. D.

Dr. Raymond E. Bailey, well known Lincoln county physician of Hamlin, died of a heart ailment on January 3, 1940. He was 38 years of age and a member of the Hamlin town council.

Dr. Bailey was born at Petroleum, West Virginia, received his academic degree from West Virginia University in 1924, and graduated from the Medical College of Virginia in 1927. Following one year's interneship at the C. and O. Hospital, Huntington, he located at Hamlin where he enjoyed a large practice. Dr. Bailey taught one year as assistant professor of anatomy at West Virginia University.

Malformations at Birth

Malformation at birth seems to be dependent on conditions which affect the germ cells prior to conception and is probably not influenced by factors which arise during pregnancy, an editorial in *The Journal of the American Medical Association* for January 13 concludes from a study made by D. P. Murphy, M.D., Philadelphia.

The study also indicates, the editorial says, that malformations are not due to syphilis or any other disease of the parents.

General News

Conference of Secretaries

The annual Conference of County Society Secretaries and Presidents was held at the Daniel Boone Hotel, Charleston, on January 6, 1940. In spite of heavy snows throughout the state, sixteen county societies were represented at the conference. The program, designed along the lines of practical interest, was considered outstanding. Dr. H. S. Parker, Marshall county president, was elected conference chairman.

Two highlights of the conference were the presentations by Dr. D. A. MacGregor of Wheeling on the work of the Medical Service Committee and Dr. George Lyon's report on a proposed five year program of graduate education for West Virginia doctors. Dr. MacGregor's talk is published elsewhere in this issue of the JOURNAL and Dr. Lyon's report will be published in the March issue.

The guest speaker at the conference was Mr. Thomas A. Hendricks, executive secretary of the Indiana State Medical Association. Mr. Hendricks not only gave the county secretaries many practical points in carrying out their various duties but ably discussed the present national trends in health legislation. A member of the Indiana State Senate, Mr. Hendricks wore his title of "Senator" with aplomb.

Dr. Frank V. Langfitt, Association president, made the opening remarks at the conference and welcomed the county officials to the all day session. Two very practical talks were made by Dr. E. N. DuPuy, Beckley, secretary of the Raleigh County Medical Society, and Dr. James L. Wade, president of the Academy of Medicine of Parkersburg. Dr. DuPuy outlined the duties of a county secretary through an entire year. Dr. Wade gave an interesting account of the Academy's method of handling ethical newspaper and other publicity.

The last conference address was made by Mr. A. W. Garnett, director of the West Virginia Department of Public Assistance. Mr. Garnett spoke on "Problems of Mutual Interest to the Doctor and the D. P. A." Following his interesting remarks and a pledge of cooperation to the medical profession, Mr. Garnett conducted a half hour question and answer period.

Following adjournment of the conference, the secretaries and presidents were guests at a get-together at Edgewood Country Club and later at the annual dinner dance of the Kanawha Medical Society.

Among those in attendance at the conference were: Dr. Langfitt, Dr. Parker of McMechen, Dr. MacGregor, Dr. DuPuy, Dr. Wade, Mr. Hendricks, Mr. Garnett, Dr. T. W. Nale of the State Health Department, Dr. W. F. Beckner and Dr. J. L. Hutchinson, president and secretary of the Cabell County Medical Society; Dr. H. L. Goodman of the Greenbrier Valley Society, Dr. W. H. Parker and Dr. J. W. Carney, president and secretary of the Logan Society; Dr. A. B. Bowyer, secretary, Central West Virginia Medical Society; Dr. E. A. Courrier and Dr. W. A. Flick, secretary and ex-president, Potomac Valley Medical Society.

Dr. E. C. Blum, secretary, Wetzel County; Dr. W. V. Wilkerson of the Boone County Society, Dr. John P. Helmick, secretary, Marion County; Dr. G. P. Morison and Dr. M. H. Porterfield, president and secretary, Eastern Panhandle Medical Society; Dr. Hu C. Myers and Dr. Guy Michael, president and secretary of Barbour-Randolph-Tucker; Dr. Russel Kessel and Dr. W. A. Thornhill, president and secretary, Kanawha County; Dr. R. K. Buford, councillor; Dr. R. A. Ireland, Charleston, and Mr. Joe Savage, executive secretary.

Conference With the President

On invitation of President Roosevelt, the committee of the American Medical Association visited the White House to discuss the plan for the construction of hospitals with federal funds.

Representing the American Medical Association on this occasion were the chairman of this committee, Dr. Irvin Abel, and as members Drs. Walter F. Donaldson, Frederic Sondern, Walter E. Vest, Fred W. Rankin and Edward H. Cary and Dr. Austin A. Hayden. Also in attendance to represent the Association were Drs. Olin West, secretary; R. G. Leland, of the Bureau of Medical Economics, and W. D. Cuter, of the Council on Medical Education and Hospitals. Representatives of the American, Catholic and Protestant hospital associations, included Monsignor Griffin, Father Schwitalla, Fred Carter, Dr. Bert W. Caldwell and Rev. Paul R. Zwilling. Included also at the conference were Surgeon General Thomas Parran and Dr. Joseph Mountin, of the U. S. Public Health Service, and Surgeon General Ross McIntire, of the Naval Medical Corps.

County Society News

Cabell County

Cabell County Medical Society held its regular monthly meeting at the Governor Cabell Hotel, Huntington, on the evening of January 11, with Dr. D. A. MacGregor, Wheeling, as the guest speaker. Dr. MacGregor's subject was "Pneumonia —The Newer Aspects of Serum and Chemo Therapy." This was a highly interesting presentation and brought forth a liberal discussion. Refreshments were served following the scientific program.

J. L. HUTCHINSON, *Secretary.*

Fayette County

The Fayette County Medical Society held the regular monthly meeting at Conley Hall, Montgomery, on Tuesday evening, January 9, 1940. Dr. A. Carlton Ernstene of the Cleveland Clinic presented a highly interesting discussion on "Bedside Diagnosis of Cardiac Disease." Discussion of the paper was led by Drs. R. H. Jones, M. A. Moore and W. P. Bittinger.

Dr. J. N. Reeves, Oak Hill, was accepted as a transfer from the Greenbrier Valley Society and Dr. Grover C. Hedrick, Jr., Glen Ferris, was accepted as a transfer from Raleigh county.

G. A. DANIEL, *Secretary.*

Kanawha County

The monthly meeting of the Kanawha Medical Society was held on Wednesday, January 24, at the Daniel Boone Hotel with Dr. Russel Kessel, president, presiding. The guest speaker of the evening was Dr. R. L. Kahn, originator of the Kahn test, of the University of Michigan, Ann Arbor. He spoke on the correct interpretation of reports of blood tests for syphilis. The nursing and technical staffs of the hospitals were special guests of the society on this occasion.

The scientific meeting was preceded by a dinner in honor of Dr. Kahn which was well attended. The society plans to precede each regular meeting with a dinner in order to give the members an opportunity to become personally acquainted with the speakers.

W. A. THORNHILL, *Secretary.*

Lewis County

The Lewis County Medical Society met on December 12 for election of officers and other business but, due to the poor attendance, the meeting was postponed until December 14. On that date the meeting was held and the primary object was to discuss whether to continue the society or to discontinue it and join the Central West Virginia Medical Society.

The meeting was opened by Dr. George Snyder and a motion was made by Dr. S. H. Burton to join the Central West Virginia Society. This motion was seconded by Dr. J. E. Offner and there was discussion by several members. Dr. E. A. Trinkle then moved to table the above motion. The motion to table was seconded and carried. The society also passed a motion by Dr. R. M. Fisher to rotate the meetings of the society between the Weston City Hospital, the Weston General Hospital and the Weston State Hospital.

Next was the election of officers. Dr. George Snyder was elected president, Dr. C. R. Davisson, vice president, and Dr. E. A. Trinkle, secretary-treasurer. Dr. Waitman T. Smith was elected to the board of censors. Dr. A. F. Lawson and Dr. Trinkle were elected delegates to the state meeting, with Dr. Theresa Snaith and Dr. Guy Stalnaker as alternates.

The January meeting of the Lewis County Medical Society was held January 10, 1940 with Dr. George Snyder presiding. The minutes of the previous meeting were read and accepted. A lecture was given by Dr. M. B. Ferderber of Pittsburgh, Pennsylvania, and the subject was "Pneumonia and Its Treatment." This was a very interesting lecture on the value of serum, Sulfapyridine and the sulfanilamide group. He discussed diagnostic methods and the most frequent complications of different types of pneumonia. The lecture was discussed by Dr. Harold Golz of Clarksburg. There were 27 doctors present at this meeting which was held at the Weston City Hospital. This was very gratifying to the members of the Lewis County Medical Society who wish to keep the society in operation.

E. A. TRINKLE, *Secretary.*

Logan County

The Logan County Medical Society held its regular monthly meeting at the Logan Woman's Club on January 10. Dr. J. Ross Hunter, Charleston, gave a talk on "Cancer of the Uterus," and

Dr. R. H. Walker, Charleston, talked on "Cancer of the Breast." A short talk on the activities of the federal syphilis project of this county was given by Dr. M. C. Brown, who is in charge of this work.

Dr. Mark Sutphin and Dr. Edwin R. Nelson, both of Logan, were elected to membership in the society. The society adopted a resolution favoring the establishment of a coordinated federal department of health headed by a doctor of medicine in the president's cabinet.

The society's Committee on Programs and Postgraduate Clinical Studies consists of Dr. A. M. French, chairman; Dr. F. E. Brammer and Dr. J. Lester Patterson.

J. W. CARNEY, *Secretary*.

Marshall County

The Marshall County Medical Society held its regular monthly meeting in the Elk's Club rooms in Moundsville on Tuesday afternoon, January 9, with a good attendance. The program consisted of a moving picture on "Modern Methods in Anesthesia—Spinal, Intravenous, Rectal."

J. A. STRIEBICH, *Secretary*.

Ohio County

The annual Jacob Schwinn Scientific Lecture was presented before the Ohio County Medical Society at its January 12 meeting by Dr. W. P. Sammons, whose subject was "Compressed Fractures of the Vertebrae." Discussion was led by Dr. Howard Weiler and Dr. C. B. Buffington. Dr. Earl S. Phillips, president, presided.

Dr. Norris W. Vaux, Professor of Obstetrics, Jefferson Medical College, Philadelphia, was the guest speaker at the January 26 meeting of the society. His subject was "Some Recent Advances in Endocrinology Relative to Obstetric Practice."

Speakers for the two February meetings will be Dr. L. J. Karnosh, Professor of Nervous Diseases of Western Reserve University, Cleveland, on February 9, and Dr. W. Wayne Babcock, Professor of Surgery, Temple University, Philadelphia, on February 23.

R. W. LUKENS, *Secretary*.

Parkersburg Academy

The regular monthly meeting of the Academy of Medicine of Parkersburg was held at the Camden-Clark Hospital on the evening of January 3 with Dr. James L. Wade, president, presiding. A

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new gavel was presented to the academy by Dr. Wade and the group voted to have a silver band placed around it on which to inscribe the names of the men using it.

The academy voted to invite a newspaper reporter to the scientific meetings and that the publicity committee censor all publicity. Dr. Louis Kroger was elected to serve on the academy board of directors. A motion to confer junior memberships to the house staff members of the two Parkersburg hospitals was referred to the board of directors.

The guest speaker of the evening was Dr. Arthur C. J. Brickel, Western Reserve University, Cleveland, who presented an extremely interesting paper on "Infection Patterns in the Hand." This was followed by questions and answers.

A. C. WOOFTER, *Secretary.*

The tabulation of the average weights at various heights according to age in 1922-1923 as compared to those in 1932-1934 showed that in all but a few instances there has been a decline in the average weight for each height at every age.

Woman's Auxiliary

State Meeting Plans

First plans for the joint meetings of the Woman's Auxiliary to the West Virginia State Medical Society and the Auxiliary to the Virginia Medical Society were made at a conference on January 17 in Charleston by the West Virginia president, Mrs. V. E. Holcombe; convention chairman, Mrs. James S. Klumpp of Huntington; convention publicity chairman, Mrs. Carney Hardman of Huntington, and Mr. Joe W. Savage, executive secretary of the West Virginia State Medical Society.

Among the plans discussed are those for a large reception and tea to be given at the Greenbrier Hotel, convention headquarters at White Sulphur Springs, by the West Virginia Auxiliary for its visitors from Virginia. The reception will be held Monday afternoon, July 29. Business sessions of the convention will begin the following morning and will continue through July 31. A number of social functions are planned jointly with the Virginia Auxiliary.

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*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, Vol. 23, No. 2, pages 201-206, March, 1939.

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A New Year's Resolution

The beginning of this new year is an excellent time for Auxiliary women to do a little mental housecleaning, to go shopping for new ideas, to parade old habits before mental eyes with a view to discarding some and keeping others. In other words, let us take stock of ourselves, especially with regard to Auxiliary matters.

Every Auxiliary in West Virginia, and, I suspect, in the whole United States, complains that members would not come regularly to meetings. Why do we not? It cannot be that we are not interested in an organization which is striving to be of benefit to our husbands in their work, to our communities in their search for ways and means of advancing health education, and to our state and nation in their declared aims as set forth in the handbook. I am sure that no doctor's wife would confess that she is indifferent to the problems and struggles of the medical societies of which we are a subsidiary part and whose problems and struggles become in some measure ours. One of our chief reasons for being an organized group is to be of service to our medical societies whenever they see fit to call upon us. The mere fact that the women of any county have seen fit to organize an Auxiliary expresses in a concrete way a desire to be of service.

It may seem to us that the medical societies continue to be unaware of our possibilities for service. We cannot blame them. In this state we are rather young as organizations go and it takes time to prove we can do something worthwhile if given the chance. But we must be prepared when the chance does come as it will eventually. We must not fail. If we do, our very raison d'etre totters and falls. If the men of our medical societies have not yet awakened to our potentialities for big things, we can still labor in the social field and aim for the promotion of greater harmony and friendship through better knowledge of each other.

If the Auxiliaries complain that their members will not come out, the women in turn complain that there are too many organizations and the demands on their time too great. Such a situation calls for a little judicious sorting of activities. Certainly the Auxiliary should not be neglected in favor

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of some other organization which does not touch our lives so intimately. There is strength in organization and however feeble we may be at first, we are bound to grow if we are sincere in our aims.

There are many resolutions which a good Auxiliary member could make in addition to the one of attending meetings regularly. There are the matters of accepting offices when proffered, chairmanships of committees, the various small tasks that arise from time to time. Also why not plan right now to attend your state meeting? You will be agreeably surprised at the uplift in the interest you have. A national meeting is really a stimulating experience. —Mary Lorentz Starcher.

Cabell County

The Woman's Auxiliary to the Cabell County Medical Society met on January 15 at the home of Mrs. Wm. Beckner, Huntington. Mrs. E. J. Humphreys, president, presided. There were thirty-one women present, including six new members and two visitors. A round table discussion on "New Year's Resolutions for the Doctor's Family," was led by Mrs. Will E. Neal.

Mrs. E. F. Reaser gave current events from the *National Health Magazine*. A committee was appointed with Mrs. Neal as chairman, to appear before the Woman's Club of Huntington and any other clubs surrounding the community, with instructions to set forth their opposition to the Wagner Bill and to enlighten the lay public as to the medical profession's reasons for such opposition.

MRS. MINNIE L. RUTHERFORD, *Secretary*.

McDowell County

The Woman's Auxiliary to the McDowell County Medical Society held their December 13 meeting in Welch, with Mrs. James Vermillion presiding. There were 22 members and two visitors in attendance.

The speakers were Mrs. Goodridge Sale, president of the local P. T. A. and Mr. Roy B. Shrout, area commissioner of the Boy Scout organization. His subject was "America's Answer," telling how the greatest youth movement in the world (Boy Scouts) may help to overcome the propaganda of the dictator nations.

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Routine business was discussed and a donation made for charitable purposes. The Auxiliary will assist in the Chest Clinic to be held in Welch during the month of March. This clinic is being sponsored by the local Woman's Club.

MRS. H. P. EVANS, *Secretary*.

Kanawha County

The Woman's Auxiliary to the Kanawha County Medical Society met on January 9, 1940 at the Charleston Woman's Club. Mrs. V. L. Peterson, president, called the meeting to order. There were thirty-five members present. Miss Dorothea Campbell of the West Virginia State Health Department addressed the assembly on "State Health Laws."

It was decided that the next meeting of the Auxiliary would be held at the home of Mrs. R. L. Anderson.

MRS. RALPH E. PENCE, *Secretary*.

Harrison County

The Woman's Auxiliary to the Harrison County Medical Society met on January 4, 1940 at the Gore Hotel, Clarksburg. Mrs. H. H. Esker, Harrison county president, presided. There were twenty-five members present. Mrs. Harold H. Golz spoke on "Cancer and Prevalence, and Symptoms and Diagnosis of Cancer."

MRS. C. F. FISHER, *Secretary*.

COMMUNICATIONS

Item from the West Virginia Medical Journal, October, 1989.

West Virginia in 1989

All who are interested in the history of West Virginia will deeply regret the sudden and tragic death last month of Dr. Roy Birdsall Cookley. At the time of his death he was engaged in compiling a history of the practice of medicine in West Virginia. It is to be hoped that someone will soon come forward to take over the masses of data which he had compiled and finish the work which he had almost brought to completion. In the meantime it might be of interest to our readers to reproduce an excerpt from his notes on a subject that has been of outstanding importance to those of us of the medical profession:

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"At the mid-winter meeting of the West Virginia Medical Society in January, 1950, the executive secretary, Mr. Joseph Whitely Selvage, reported on the ten-year medical experiment that the society had instituted in 1945 in the two towns of Smith and Petersville. Mr. Selvage recalled the early steps in this experiment, how the medical society desiring to improve the quality of medical service and to make it less costly to the patient and more remunerative to the physician had surveyed these two nearby communities and had used one as a control and the other as the field of its experiment.

"Smith and Petersville were of about four thousand population, each was about equally distant from the largest nearby city and each was on a par with the other as to the economic status of its population. In each case about one-third the population was engaged in farming, a little more than one-third in manufacturing and the rest scattered among various and no occupations. Each had five physicians, all doing general practice. In Petersville, which was the control town, no modification in the existing method of medical practice was instituted. Such evolutionary changes as occurred in other places were allowed to occur there. In Smith, Mr. Selvage and the committee from the medical society council met with the five local physicians. It was found that the physicians were doing general practice, had no special training and were competing on a fair basis. It was shown to them that they

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were competitors and therefore each man was strong where his competitors were strong and weak where they were weak. It was also brought out that they were too busy to develop along the lines they wanted to develop and were also shown that there was a constant stream of patients going out of their community, and of course these were the more lucrative patients, to the specialists in the city. Through Mr. Selvage's logic it soon became evident that these five local physicians had been engaged in a competition that was productive of little good to any body and of much disadvantage to themselves and to the community which they served. The medical society's plans were soon accepted. The doctors organized themselves into a cooperative group, each man limited his work to some particular field. The patients came thereafter to consult the group rather than one man. The expenses and profits were shared by all and the law of cause and effect allowed to operate.

"Before the expiration of ten years it was very obvious that the results exceeded anyone's fondest hopes. Today, each physician reports that his income is four times beyond what he might have reasonably expected it to be ten years before. The conditions of practice are immeasurably better. Each man has been able to so qualify himself that all are diplomats of some national scientific board and three of them have international reputations in their specialty. Better than this, however, are the results in the health of the community. There is no complaint in Smith about the high cost of medical care. The hospital that has grown up in this community is accepted all over the state and beyond as a model institution. The State Department of Health statistics show that Smith is the healthiest locality in the state. The growth of the city has been phenomenal in the past five years and it has become clearly evident that large industry is attracted to the community with efficient medical care. Of course with new growth several other physicians have been attracted to this community and have in all cases been absorbed into the group, either as specialists or general practitioners. The fact that a general practitioner has a very important place in any group organizations seems not to have been well demonstrated before this experiment. The results have been so outstandingly brilliant that investigators from all over the world have paid countless visits to this community.

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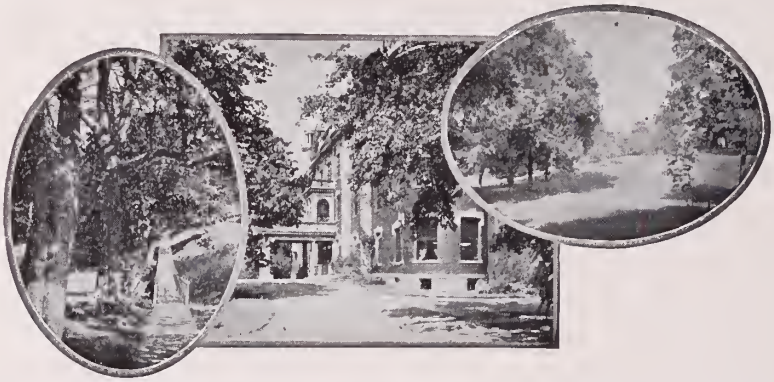

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16 pages	13.55	12.55	16.55	15.05	20.55	18.05	29.50	25.50
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Dr. Cookley's note adds that the medical society accepted Mr. Selvage's report.

Goiter Prize Award

The American Association for the Study of Goiter again offers the Van Meter Prize Award of three hundred dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the association which will be held at Rochester, Minnesota on April 15, 16 and 17, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English, and a typewritten double-spaced copy sent to the corresponding secretary, Dr. W. Blair Mosser, 133 Biddle Street, Kane, Pennsylvania not later than March 15.

The committee, who will review the manuscripts, is composed of men well qualified to judge the merits of the competing essays. Dr. T. L. Althausen of the University of California received the award for the year 1939 in recognition of his essay entitled "A Study of the Influence of the Thyroid Gland on the Digestive Tract."

A place will be reserved on the program of the annual meeting for presentation of the prize award essay by the author if it is possible for him to attend. The essay will be published in the annual proceedings of the association. This will not prevent its further publication, however, in any journal selected by the author.

The eagle eye of Dr. Howard T. Phillips, Wheeling dermatologist, has sent in a couple of unusual page headings from the January issue of the *Southern Medical Journal*. The heading on page 5 reads "Vest: Medicine As a Profession." On page 7, we find "Bigger: Heart Wounds."

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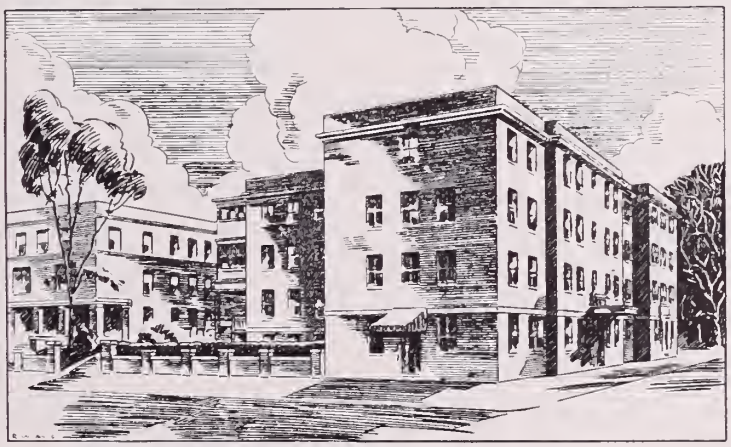

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A Shameful Record

When he spoke here recently at the annual open meeting of the county medical society, Dr. Walter E. Vest of Huntington said that the need of larger tubercular and mental hospital facilities in West Virginia is "acute." That is putting it mildly, especially as far as mental hospital facilities are concerned.

In practically every county jail of West Virginia, one or more persons are now being confined as insane persons under commitment to a state asylum. They are being held in jail because no facilities are available for them in any of the asylums. In one moderately sized county, nine such persons have been confined for many weeks.

That isn't the worst feature of the situation. Even for those persons whom the state has been able to receive in its asylums, the conditions are far from ideal. Our asylums are too largely places of detention rather than hospitals of treatment. West Virginia is a laggard in giving its mentally diseased the benefit of modern medicine and psychiatry in the treatment of their diseases.

It is a reproach upon the state that it has done so little about that problem and is now so complacent about its many ramifications. Doctors, nurses, and attendants in the asylums—have too long been selected upon a basis of political patronage rather than for any real qualifications they have for the positions they occupy. Altogether too many scandalous reports about conditions in our asylums have been quieted with a whitewash brush rather than a thorough inquiry really aimed at developing the facts.

If the State Medical Association desires to make a real contribution to the development of a better medical and health program in West Virginia, it cannot occupy itself with a more pressing problem than the status of our mental hospital facilities.—*Morgantown Post.*

The Southeastern Surgical Congress will hold its Eleventh Annual Assembly in Birmingham, March 11, 12, 13, 1940, at the Tutwiler Hotel.

The completed programs will be mailed out between the fifteenth of February and the first of March. For information write Doctor B. T. Beasley, Secretary-Treasurer, 701 Hurt Bldg., Atlanta, Georgia.

Directory of Physicians in Limited Practice

Advertising space in the directory of physicians in limited practice can be had by communicating with Mr. Joe W. Savage, Secretary-Manager of the West Virginia Medical Journal, Box 787, Charleston, W. Va. The cost is one dollar per month. Space may be had only by members of the West Virginia State Medical Association.

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OBSTETRICAL COMPLICATIONS WITH CONFLICTING INTEREST OF MOTHER AND CHILD*

By THADDEUS L. MONTGOMERY, M. D.
Philadelphia, Pennsylvania

To experienced physicians it is common knowledge that the preservation of both fetal and maternal life is difficult in the face of certain obstetrical complications. This observation seems also well recognized by the laity, for how often does one receive from the distraught husband this significant statement: "Doctor, we would like to have the baby, but if any situation arises where you cannot save both baby and mother, save the mother. Do not let anything happen to my wife."

In presenting this subject, therefore, we are dealing with a topic that is not new or unfamiliar, but rather a reconsideration of one quite ancient in obstetrical practice. My reason for again presenting it is because of its constant importance, and because as our knowledge increases from year to year, new light may be shed upon the several problems involved.

*Presented before the West Virginia State Medical Association, White Sulphur Springs, July 11, 1939.

THE AUTHOR

Dr. Montgomery, graduate and Professor of Clinical Obstetrics, Jefferson Medical College; member, American Gynecological Society, American Association of Gynecologists and Obstetricians.

What I have to present concerning these problems is based upon the experiences of personal practice, and upon the study of data collected by the several maternal and fetal welfare agencies of the city of Philadelphia.

In general, it may be stated that what is good obstetrics for the mother is generally good for the baby. Chart I, which presents in its first graph the data of maternal mortality in Philadelphia and in its second the data of stillbirth rate, illustrates this point very clearly. In 1929 the maternal mortality rate in Philadelphia was well over seven per 1,000 live births. The following year the investigations of the Maternal Welfare Com-

mittee of the Philadelphia County Medical Society were undertaken under the chairmanship of Dr. Philip Williams, and from that time until the present there has been a steady fall in maternal fatality in our city, an improvement the like of which has never taken place before. Particularly during the past five or six years has the decline been decidedly and clearly evident. In 1937 the puerperal mortality rate was 4.3 per cent, the lowest which has ever been known in Philadelphia, and in 1938 it dropped further to 3.1, less than one-half of the rate of 10 years ago.

Coincident with this improvement in maternal care there has been a constant lessening in stillbirths, as illustrated in the second group (Chart I). In 1929 the latter rate was well over 40 per 1,000; in 1938 the rate was 26.

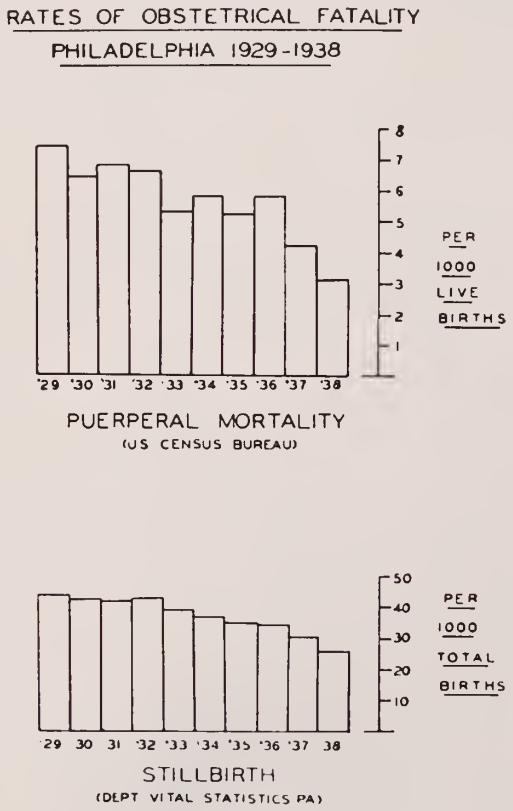

Chart I

Needless to say we are decidedly pleased with this trend in statistics, and are happy to note that in our monthly analyses of maternal death there are fewer and fewer of those cases in which gross mistakes in judgment or in technique on the part of physician are recorded. Apparently it has become a major concern of every obstetrician in Philadelphia to play his part in keeping the mortality at a

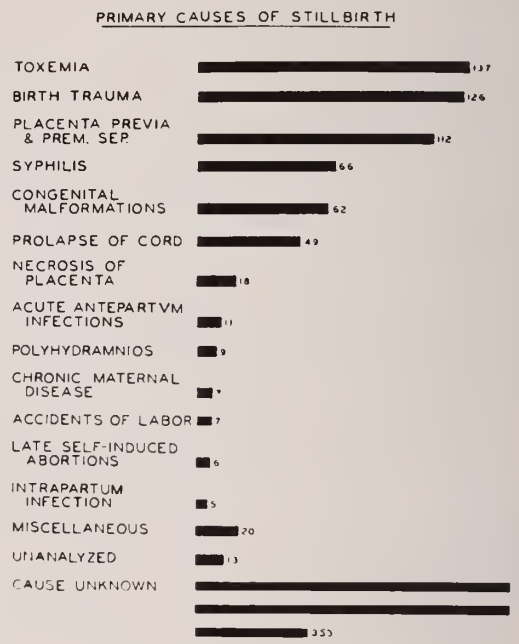

Chart 11

low level. He who undertakes to attend a woman in pregnancy and labor must have the feeling that the great body of representative physicians of the city are looking over his shoulder to discern that his work is honestly and capably performed.

It is safe, therefore, to say that many of the problems of maternal mortality in Philadelphia have been eliminated by the combined effect of this analysis, of education, and of the pressure of general opinion. It is also safe to assert that the improvement in care of the mother has been reflected in lessening of the rate of stillbirth.

Not content with the study of maternal mortality alone, the Philadelphia Obstetrical Society appointed a committee two years ago to make an analysis of stillbirths. The assignment was the analysis of 1,000 consecutive stillbirths, at the conclusion of which a report was to be presented to the society.

This analysis has been completed, the report has been made. Particularly impressive are the number of cases of stillbirth in which grave complications arose endangering the life of the mother as well; situations not met with in our analysis of maternal death, and

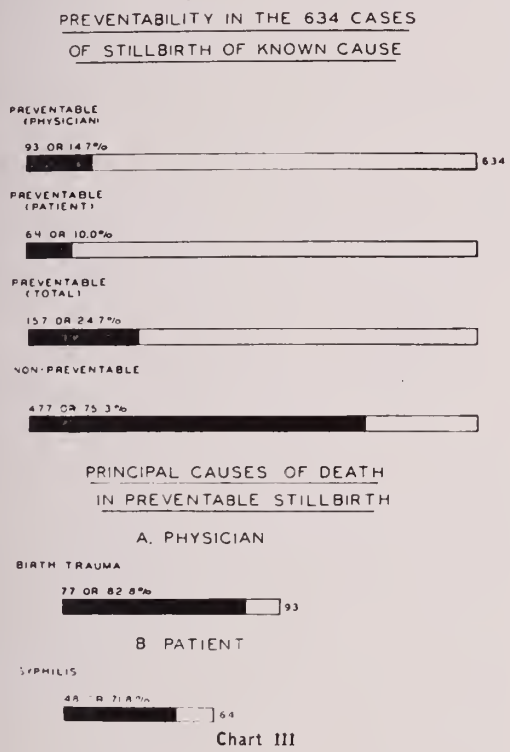

Chart III

therefore now challenging our attention and concern. In many of these situations, the interests of the baby appear somewhat antagonistic to the mother. It is these with which we are principally concerned (this morning).

As a foundation for our discussion let me refer briefly to the statistics of our first 1,000 cases (Chart II). Among the primary causes of stillbirth we found 13.7 per cent directly attributable to toxemia of pregnancy; 12.6 per cent to birth trauma, and 11.2 per cent to antenatal hemorrhage (placenta prævia or premature separation). Other common causes of stillbirth were syphilis, frequently encountered among the colored patients of our city; congenital malformations of the fetus; prolapse of the cord; necrosis and insufficiency of the placenta, and various other acute and chronic disturbances of the mother or fetus which led to intrauterine fetal death. We endeavored to determine how many of these fetal deaths were avoidable and found that while such a deduction was often difficult that in approximately 14.7 per cent of the stillbirths the death was preventable on the part of the physician, he having failed either in obstetrical judgment or technical procedure, and in 10 per cent on the part of the patient, she having either refused the advice which was given her or failed to appear at a proper time for prenatal care. The total preventability of the series was therefore approximately 25 per cent. (Chart III)

Of those cases that were considered preventable on the part of the physician, 77 or 82.8 per cent were attributable to birth trauma; in those conditions attributable to failure of cooperation on the part of the patient, 48 or 71.8 per cent were due to syphilis.

Our efforts toward improvement of stillbirth rate must therefore center upon the three principal causes of stillbirth: toxemia, birth trauma, and antepartum hemorrhage.

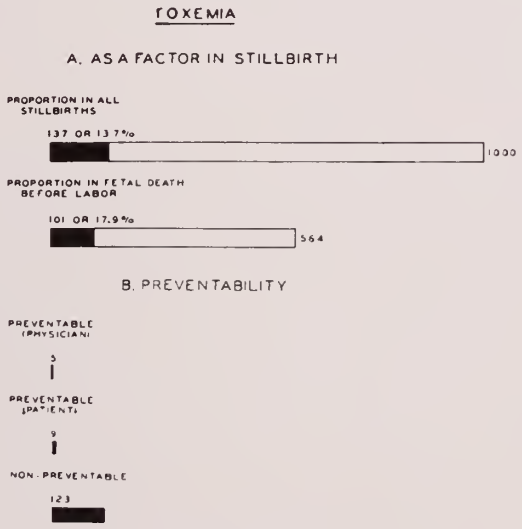

Chart IV

The problem is complicated by the fact that it is in just these three conditions that the interests of mother and fetus are usually opposing. The question, therefore, comes to mind and must constantly be kept in mind—can we lower our fetal mortality rate without raising the maternal?

TOXEMIA

Let us consider first the group of stillbirths in toxemia patients. (Chart IV) Of these there were 137, 13.7 per cent of the total. One hundred and one of the 137 toxemia deaths occurred before labor and constituted 17.9 per cent of all the fetal deaths of that period. A careful analysis of this group revealed that in five instances the death was considered preventable on the part of the physician, in nine instances preventable on the part of the patient, and in 123 the deaths were considered non-preventable.

Such percentages do not present an encouraging picture, and even if we correct the 14 instances in which the fetal death was preventable, there is left the large group of 123 in which the circumstance was considered unavoidable. Among the latter were many instances in which the fetus died and was expelled before the period of viability; in other instances induction of labor was done to save the mother from further damage, and apparently in the entire group those measures were employed which are commonly accepted as good practice on the part of the attending physician.

TOXEMIA NOT PREVENTABLE

I hold no brief for the frequent statement that toxemia is preventable and that therefore fetal death from toxemia is avoidable. As long as the cause of toxemia of pregnancy is unknown we can have no specific method for its prevention and no dependable measures for its cure. In general our only recourse is the arrest of pregnancy in the presence of severe and advanced states of this disease. The natural termination of fetal life in utero and its subsequent expulsion would therefore appear as an ideal method of protecting the maternal organism. One may question, therefore, whether we have sufficient knowledge safely to reduce the mortality in this group of 123 cases.

However, from personal observations and experience with toxemia of pregnancy in private practice, where patients can be more carefully controlled, I am of the impression that we are doing better with these cases than we did a few years ago, that there are fewer serious manifestations in late pregnancy and fewer stillbirths.

WELL BALANCED DIET

By what measures may some degree of progress be achieved? First, by a change of viewpoint in regard to diet. I am firmly convinced of the importance of giving all obstetrical patients, even those who have had a history of previous toxemia or nephritis, a full, well balanced diet, including an ample proportion of protein as well as the requisite quantities of carbohydrate, fat, leafy vegetables and fruits; carefully controlling, however, the intake of fat and carbohydrate so that the weight gain does not exceed 20 to 25 pounds during the course of the antenatal period. If at any time in the latter part of pregnancy edema tends to appear, the salt intake is promptly cut down and the protein intake is increased. Adequate intake of vitamins A, B, C and D is insisted upon, and in the case of those patients who have displayed a tendency to hypertension or who have manifested symptoms of late toxemia in previous pregnancies the administration of vitamin E in the form of wheat germ oil is provided for. This preparation I give to approximately 35 per cent of all patients during early pregnancy and always insist upon its use in the cases described.

Second, rest. Adequate physical rest and mental repose are far more important to the toxemic patient and the hypertensive than is exercise. This calls for retirement in bed for 10 to 12 hours at night and for one and a half to two hours during the course of the day; such periods being extended, if necessary, in later pregnancy.

Third, elimination. Elimination should be maintained by mild laxatives if required. Frequent purgation and the use of colonic irrigations has apparently no influence whatever upon the so-called toxic process.

Fourth, frequent painstaking observation. These patients are seen at the office approxi-

mately every two weeks during the early half of pregnancy and as often as once or twice a week at the office or home during the latter half of pregnancy.

If, despite the measures prescribed, the blood pressure tends to rise, edema to accumulate, and albumin to appear in the urine, pregnancy must be terminated, for neglect to do so will result in irreparable damage to mother and death to the fetus.

BLOOD PRESSURES

Under this regime I find that the average hypertensive, that is the individual who in a non-pregnant condition has a pressure of 140 to 160, does quite well. Generally during the mid-portion of the pregnancy the blood pressure falls to 120 or 130, without changes in the kidney, and continues so until the last three or four weeks of pregnancy. Under the burden of the full term pregnancy, kidney disturbances and elevation of blood pressure are likely to occur. When this takes place the pregnancy must be terminated, either by induction of labor or by hysterotomy, depending upon the peculiar circumstances of the case. Termination of pregnancy within four to six weeks of term will usually permit of the birth of a viable child and the rapid recovery of the mother.

By such a regime I believe it is possible to save a certain number of babies without actually endangering the health of the parent.

Do not for the moment let me be understood as indicating that all pregnancies may thereby be carried to a successful termination. Many cases are unfitted for such prolongation. The methods described require close supervision and are naturally carried out more easily in cooperative private practice than they are in hospital or clinic work. They are always more easily accomplished with an intelligent type of patient, and one whose economic circumstances permit of her following the rules and regulations of the procedure.

A complete, satisfactory and rational treatment of toxemia, however, must wait upon a fuller knowledge of the etiology of this peculiar disease.

ANTEPARTUM HEMORRHAGE

In antepartum hemorrhage we have a complication which accounts for 11.2 per cent of

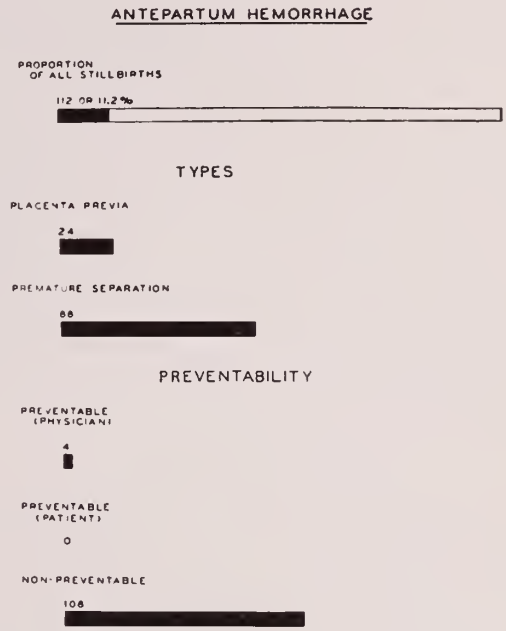

Chart V

all stillbirths. (Chart V) Twenty-four of the 112 cases were placenta prævia and 88 were premature separation. I am inclined to think, however, many of the cases of vicious or low implantation were misdiagnosed as premature separation, and a more careful study of them would have revealed a higher percentage of placenta prævia. In this group, four of the fetal deaths were considered preventable on the part of the physicians, none on the part of the patient, and 108, according to our criteria of avoidability, as non-preventable. Here again we are dealing with lesions in which the etiology is obscure.

In the instance of placenta prævia the question again arises: Can we reduce the fetal mortality without detrimentally effecting the maternal? For once the diagnosis is made of this vicious condition, it becomes highly questionable whether the pregnancy should be prolonged in the hope of carrying a small baby with a treacherous placenta to the period of fetal viability. Not a few serious accidents have occurred in the attempt to do so. He who undertakes this responsibility must have his patient under the closest observation and

perfect control. While the bleeding in placenta prævia is most likely to be incited by physical activity, straining at defecation, or by such local trauma as coitus, yet severe hemorrhage may occur without exciting factor and "out of a clear sky."

When a diagnosis is made of complete placenta prævia, it is highly questionable whether the obstetrician should attempt to carry the pregnancy on or beyond the period at which he encounters it. If one by diagnostic measures, however, can be certain of the presence of a partial or marginal placenta prævia, then it is reasonably safe to carry such patients to or near term.

X-RAY DETERMINATION

In my afternoon paper before the gynecologic and obstetric group I intend to discuss more fully some of the finer considerations in the diagnosis of placenta prævia as to its type, and a number of the points in management. Suffice to say here that we have found that the x-ray determination of placental site has proved of great assistance in formulating our judgment in these cases, and with its help we have often been able to decide whether to permit the patient to be carried on to a more advanced period of pregnancy or whether to interrupt the course of the gestation immediately.

Premature separation of the placenta, as we well know, is closely allied with the toxemia of late pregnancy. In a study of a series of cases in our department, I found that 85 per cent of those which occurred during the course of pregnancy were attributable to pre-eclamptic toxemia or chronic nephritis. There seems little doubt that the frank severe types of separation are allied with these toxic states. This observation places the premature separation cases practically in the group of toxemia of pregnancy.

Those methods of management which bring about a favorable outcome in toxemia will tend to decrease the number of premature separations. This fact has been impressed upon me particularly in recent years.

The importance and value of wheat germ oil as a prophylactic agent in this condition also should be emphasized. In some obscure manner it seems in many cases to prevent the recurrence of toxemia and lessen the manifestations of nephritis and hypertension, favor a firm attachment of the placenta to the uterus, and decrease the likelihood of premature separation. Shute has suggested the administration of large amounts of wheat germ oil upon the occurrence of early symptoms of separation. I would be inclined to emphasize more the administration of the wheat germ oil long before such symptoms have made their appearance.

During the last two years I have had several vivid examples of the usefulness of vitamin E as a prophylactic agent in this connection. Five patients I particularly call to mind had had elevated blood pressure, nephritic change, and sudden abortion, or premature separation of the placenta with previous pregnancies. Following the administration of wheat germ oil from an early date in pregnancy, all went to or very near term without any symptoms of disturbance, and in only one was it necessary to perform an induction of labor.

ALL NOT SUCCESSFUL

Of course, not all responses to such methods of management in premature separation will be uniformly successful. In the face of severe nephritis or vascular disease the pregnancy may terminate in sudden separation of the ovular sac during the first two or three months, or the interruption may manifest itself as an abrupt expulsion of the placenta and fetus at the fifth or sixth month; or the placenta may be so studded with small hemorrhagic infarcts that the nutrition and oxygenation of the fetus may be interfered with and the baby die in utero.

I am quite convinced, however, that by more careful consideration of the requirements of the individual case, and by closer supervision, a reduction can be made in the fetal deaths associated with antepartum hemorrhage and that the same can be accom-

plished without adding materially to maternal danger.

BIRTH TRAUMA

In birth trauma we find a fertile field for reduction of stillbirth rate, for therein lies the greatest preventability on the part of the physician. As we review the figures of birth trauma from the Philadelphia study, we note that in 12.6 per cent of all the stillbirths fetal death was due to trauma sustained during labor, and that birth trauma accounted for 35.5 per cent of the deaths that took place

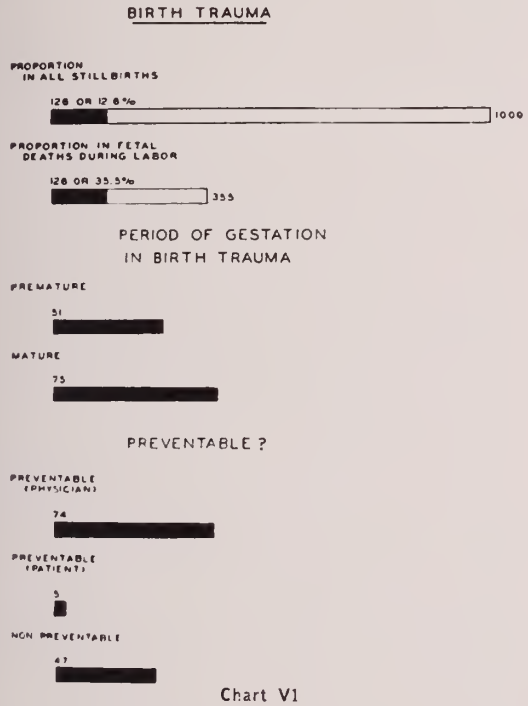

Chart VI

during the course of labor. (Chart VI) Of the 126 stillbirths, 51 were in premature infants, and 75 in mature; 74 were attributable to preventable factors of management on the part of the physician, five to lack of cooperativeness on the part of the patient; 47 were considered non-preventable.

The 74 cases which were held preventable on the part of the physician included instances in which poor judgment was revealed in the selection of time for delivery or procedure of delivery, or faulty technique was employed in its execution, e.g., imprudent hasty interference in breech, inexperienced and unguided efforts at delivery in breech, attempt to deliver by the vaginal route cases which obviously were unsuited to this method of delivery and in which no proper or complete studies had been made of disproportion, administration of pituitrin in order to hasten the birth in moderate disproportion, attempts at forceps delivery with the cervix incompletely dilated, etc.

Such gross errors in obstetrical management scarcely require further consideration. They are to be condemned and not condoned. As time goes on they are apparently decreasing. We see fewer and fewer of them in the study of maternal deaths as the years go by, and we hope to find the same improvement as we analyze our fetal mortality.

NON-PREVENTABLE GROUP

The group which presents a more puzzling problem is the so-called "non-preventable", for therein were included many cases in which judgment could not be quickly or easily formulated and fetuses died in spite of careful technical procedure. Often, after careful study of the situation, the obstetrician had chosen to undertake a vaginal delivery, fully realizing that the labor might be a difficult one. The labor proved to be more difficult than had been anticipated, and in the course of time the attendant found himself involved in a situation in which the maternal powers were at a low ebb, the fetal conditions not satisfactory, and the progress of labor not normally advanced. When the attendant decided to complete his delivery from below, believing that the attempt to do otherwise would greatly endanger the mother's life, and upon doing so fetal death occurred, the death was considered obstetrically non-avoidable. Some rash or dangerous operation might have been invoked at the last moment to save the life of the baby, but from the broader viewpoint this could not have been considered sound obstetrics.

The frequency with which this situation arises points to the complicated and difficult nature of obstetrical practice in this country. I doubt if there is any country in the world in which there is a greater mixture of races and a more unfavorable background for the

development of cephalopelvic disproportion than in the United States. We have had pointed out to us frequently the low obstetrical mortality of the Scandinavian countries, but the conditions of their practice are much different than ours. Recently, in conversation with one of the physicians of a Stockholm hospital, I was informed that in their institution they had had one case of cephalopelvic disproportion in the last 2,000 deliveries and one cesarean section performed because of this indication. In the obstetrical wards of our large city hospitals scarcely a day passes but what we encounter one or more cases of questionable disproportion between the fetal head and the pelvic inlet. Doubtless by our more successful efforts in preserving the offspring in these situations we are carrying on for future generations an ever accumulating problem in the heredity of distorted pelvic architecture. It is this feature of obstetrical practice which makes our work more interesting and also more difficult. The detailed and complete study of these patients constitutes one of the most important considerations of obstetrical practice.

COMBINED EFFORTS NEEDED

Such study requires the combined efforts of the clinician and the röentgenologist. Not often is one or the other of these alone able to reach a dependable conclusion.

At the first examination of his pregnant patient the physician may suspect that he will encounter difficulty at parturition. The external pelvic dimensions and the findings of his internal examination should be carefully recorded on the chart as part of the initial studies. As pregnancy advances the obstetrician should, by careful palpation of the fetal head in its relationship to the contours of the inlet, determine how the mass of one is fitting the space of the other. There are various modifications of the so-called Müller method of fitting the head into the pelvis with which one should become familiar. They give a great deal of information when properly performed near term. Possibly the most useful is the so-called Hillis method, in which the assistant places one hand on the fundus, the other against the fetal back, straightens out the fetal spine and exerts pressure down towards the inlet while the obstetrician with one hand adjusts the fetal head into the inlet and with the finger of the other hand in the rectum the descent of the presenting part. One does not expect the fetal head to descend far, but it should at least adapt itself nicely to the contours of the pelvic inlet. Within two weeks of term, in questionable cases, resort should be had to röentgenography. One plate should be taken directly perpendicular to the pelvic inlet, the patient in a semi-reclining position so that the inlet is parallel to the x-ray plate. A second, and perhaps more important plate should be taken in the lateral view, to demonstrate the antero-posterior diameters of the pelvis and the relationship of the fetal head to them. A third view may be taken, in questionable cases, of the pelvic outlet, which will also show the degree of proximity of ischial spines and ischial tuberosities.

Upon the basis of the findings of röentgenography and his own clinical study of the patient, a decision must be reached as to whether the patient should or should not be allowed to go into labor. Many subtle factors enter into this decision; the race, age, general physical type, occurrence of previous stillbirths in an infertile subject, the value and importance of the individual pregnancy itself. Time does not permit of considering each of these factors, but all play a significant part in the ultimate management.

CESAREAN SECTION

For the patient who is an unfavorable subject for vaginal delivery elective abdominal cesarean section should be performed. As to the type of elective cesarean section, that should, I believe, be a matter of choice on the part of the operator. I personally prefer to do the low flap operation wherever such is feasible but have no hesitancy in performing a corporal incision in elective cases. In the hands of a skilled operator the mortality of such an operation should be exceedingly low.

For the past five years it has been, in our department, less than one per cent. The mortality of the fetus in elective operation should also be low, although one must and should have always a skilled individual to take the baby and provide for its resuscitation and thorough oxygenation. Peculiar to say, not a few babies develop a fatal atelectasis after elective cesarean section.

USE OF SEDATION

The patient who is allowed to proceed in labor must be watched most carefully. Sedation should be used judiciously, and under such circumstances morphine and scopolamine are preferred to the barbiturates. An ample quantity of liquids and carbohydrates must be provided during the first and second stage and all measures taken to insure that the vitality is not impaired. One is never completely sure what type of operative delivery he may have to invoke, and his patient must be kept in the best condition possible for any eventuality. Under such circumstances the use of depressing drugs is particularly to be avoided.

The so-called trial labor is not a true trial unless the membranes have ruptured and the patient has had second stage type of pains. One can never decide what a patient is going to do during the first stage of labor while the amniotic sac is still intact. After the membranes have ruptured and labor pains have become severe, and the head has begun to mould, then one should carefully recheck his findings to ascertain that progress is satisfactory. The observation of abdominal examination and rectal examination are still important, and in case of uncertainty the patient should be carefully scrubbed as for delivery and an asceptic vaginal examination performed. Where the facilities for x-ray study during labor are available these should again be invoked, particularly if there is any uncertainty about the clinical examination. We have found the röentgenographic examination at this period particularly helpful; Caldwell and Moloy also emphasize its importance. If at this time the fetal head is extensively moulded and still shows no disposition to enter the pelvic inlet, it is very doubtful that a vaginal delivery can be achieved safely.

Under such circumstances the obstetrician must acknowledge his mistake in judgment, must change his campaign of management, and seriously consider the advisability of entering the abdomen to deliver the patient. This decision is guided by the patient's general condition and by the cleanliness of the birth canal. If the patient has been properly handled during parturition, her strength preserved, the vaginal tract uncontaminated, and the membranes not ruptured too long a time, the skilled attendant may, with reasonable safety, perform the low flap operation. If the membranes have ruptured early, if there is intrapartum fever and evidences of intrapartum infection, three courses are open: first, the attempt to deliver the baby from below, a procedure which will probably result in fetal death and serious injury to the mother; second, the undertaking of a complete extraperitoneal operation of the so-called Latzko type; and third, the performance of abdominal cesarean section and hysterectomy.

In certain instances it will be impossible to do other than the mutilating operation from below. The Latzko operation is difficult technically, and unless one has had the privilege of watching and assisting with it, it certainly should not be performed by the casual operator. The operation of cesarean section and hysterectomy is also a formidable one and carries with it a very decided mortality. So that in this trying situation the obstetrician finds himself faced with an inevitable serious problem and one which has grave implications for both of his patients.

In view of the apparently increasing number of cases of cephalopelvic disproportion, the later age at which marriage is occurring, the decrease in family size, and the relative increase of importance of the individual child's life, the unwillingness of the modern mother to jeopardize the chances of survival of her first or any other offspring, there has

been inevitably and gradually an increase in the frequency of cesarean section which resists all efforts at arrest. Granting that in many instances the operation has been misapplied and frequently performed at the wrong time, nevertheless I see no prospect of its frequency decreasing. It is too important a life-saving measure.

The considerations which I have described in the management of cephalopelvic disproportion are ones which tax the skill of the most able accoucheur. They are situations which therefore call for group consideration, for consultation. Two years ago a resolution was passed by the Maternal Welfare Committee recommending that all hospitals of the city insist upon consultation in the case of any patient in labor over 24 hours, or in the case of any labor in which cesarean section is contemplated. This rule has been adopted by every institution in the city and has had a very favorable influence. We now see fewer and fewer of the late, dangerous, fatal cesarean sections.

Therefore, while the problems of disproportion due to birth trauma are eventually increasing, I feel confident that the employment of careful methods of study will serve to lower the fetal death rate without increasing the maternal.

PITUITRIN IN LABOR

Before leaving the topic of birth trauma, let me call attention to the deleterious effect of pituitrin injections in labor upon the vitality of the fetus. For many years we have known that the administration of large doses of pituitrin in the course of labor were dangerous, particularly where the cervix and birth canal are undilated and where there are moderate grades of disproportion. The danger has been that of uterine rupture, and when the drug pituitrin was first introduced and was being so widely used as a stimulus to labor, this fatal complication was not infrequently encountered. I am glad to report that in the last two years we have had only one case of rupture of the uterus from such a cause, and the use of large doses of pituitrin is now practically unknown in the city.

The stillbirth study has called attention, however, to another danger in the use of pituitrin, and that is its employment in small doses (two or three minims) to stimulate lagging labor. I dare say that most of us have at one time or another administered these small doses of pituitrin in a patient in whom the uterine contractions have lagged and the labor seems to be at a standstill. Just how this form of administration might act we never fully realized until we began the analysis of stillbirths. In our first 1,000 we have encountered 18 stillbirths in which the fetal heart sounds suddenly disappeared immediately following the administration of small amounts of pituitrin, and no other cause for fetal death could be determined. It appears that the injection of even minute doses of this drug may have a very intensive effect upon the uterus when the organ is sensitized by the presence of labor. The injection which might have very little reaction before the onset of labor now will put the uterus into tetanic contraction, cut off the blood supply to the placenta, and lead to intrauterine asphyxia of the fetus.

If time permitted, there are many other factors in the production of birth trauma which might well be dwelt upon: the difficulties of breech presentation, the problem of the endocrine patient with uterine inertia, the influence of the various types of pelvic architecture, etc. To undertake this discussion would carry us on interminably.

SUMMARY

Reading over this paper, I find that already it rambles over a considerable amount of territory, though I hope not too widely to bring home the points which were originally in mind, that:

1. "Good obstetrics" for the mother is in general good procedure for the baby, and improvement in maternal death rate is generally accompanied by improvement of the fetal.

2. Careful analysis of stillbirths reveals, however, a number of fresh problems in

which the interests of the fetus require further consideration.

3. These problems have to do with obstetrical management in the face of toxemia, antepartum hemorrhage, and disproportion, conditions in which the interests of mother and fetus may to some degree appear antagonistic.

4. Measures have been outlined by which a reduction in stillbirth rate in these conditions may be anticipated.

5. Such measures depend upon skillful, painstaking supervision on the part of the physician and intelligent cooperation from the patient.

6. The greatest field for improvement lies in the field of stillbirth from trauma.

7. In toxemia of pregnancy and in antepartum hemorrhage something more may be done for the baby, but not too much can be expected until our knowledge of mysterious etiological factors is enhanced.

PENETRATING WOUNDS OF THE ABDOMEN INFLICTED BY FIREARMS

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ABOUT the earliest observation covering the treatment of penetrating wounds of the abdomen by firearms was made by Felix Wirtz, a Basel (or Basle) surgeon in 1596. He dismissed them all as being fatal, hence deserving no treatment. This type of injury first became prevalent during the custom of pistol dueling. Surgery was then indicated only when the abdominal contents had eviscerated.

John Hunter recommended surgery in the presence of severe hemorrhage where an artery must be ligated; when the wound contains a foreign body which cannot be removed without incision, the delay is more dangerous than the operation; and, when organs such as the intestines are outside the body cavity and cannot be replaced without incision.

During the latter part of the eighteenth and early part of the nineteenth centuries, bleeding was one of the chief therapeutic measures in the treatment of these cases, with, according to Lagarde, a mortality rate 92.5 per cent. During the Crimean War it was suggested by Baudus that a small exploratory opening be made in the abdomen to determine the presence or absence of active hemorrhage. If it were present the opening was enlarged and the offending vessel ligated. The only indication for exploratory surgery at the time of the War of the Rebellion was hemorrhage that could not be controlled by bandaging. By the time of the Franco-German War it was decided to discontinue blood letting and there was an immediate drop in the mortality rate to 69 per cent. During the Spanish-American War the first attempts were made to completely repair the intra-abdominal damage and then only five cases were given the benefit of this treatment. However, the mortality rate was estimated at 67.1 per cent. In the World War, it was found that more thorough management of these cases at the stations near the front by exploratory laparotomy greatly reduced the mortality rate. Two thousand, five hundred and forty-six cases were treated in the United States hospitals with a 43.3 per cent mortality rate. Wallace's calculations of 1,200 cases of the British Expeditionary Forces in France in 1916 and 1917 show a 53.9 per cent operative mortality and a 60.2 per cent total mortality

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rate. Fenner in 1902 reported a 74 per cent mortality rate in New Orleans. Galtman in 1916 reported 60.8 per cent mortality in Memphis and Lockwood, Loria, Mason Binings and Willis and Kennedy report mortality rates which are comparable. McGuire reports only 30 per cent mortality in 150 cases. In Wilson's series of 289 cases 76.37 per cent died when there were complicating chest wounds, while the mortality of wounds of the abdomen alone was only 47 per cent.

INCREASE IN SOUTH

In the United States the incidence of abdominal gunshot wounds apparently increases as one proceeds southward. This, at first glance, would seem to be due to the greater Negro population. In Willis' series at Rocky Mount, North Carolina, the ratio was five Negroes to one white. However, in the series of the Charity Hospital in New Orleans the ratio was only a little more than two to one.

The reason for the greater mortality rate among civilians as compared to soldiers is most probably the condition of the gut. Brawls, which result in abdominal gunshot wounds, are usually preceded by excessive drinking and eating so that the small intestine is more or less filled. It was observed on soldiers in France that the small gut was usually empty. Hence, the danger of peritonitis was somewhat lessened.

The severity of gunshot wounds of the abdomen is determined chiefly by three factors: (1) The degree of visceral damage; (2) the amount of hemorrhage, and (3) the time elapsed before completion of surgical repair. The degree of visceral damage is covered by Lorea's classification of abdominal wounds: contusions, abrasions, penetrations, perforations, and lacerations.

Very few gunshot wounds of the abdomen occur without visceral damage. The factor of the degree of visceral damage is out of control of surgery, so certain injuries will always carry a high mortality rate. It is illustrated by the fact that damage to a hollow viscus is more serious than to a solid one. A tear of the pancreas is more serious than one of the liver or spleen, and a perforation of the stomach or small intestine is not as dangerous as one of the large bowel. The number of perforations must be considered, since their increase in number the more difficult and time consuming is their isolation and suture. Furthermore, wounds of the upper abdomen are more apt to open large vessels.

The second factor, hemorrhage, is partially under surgical control. Mason, of Birmingham, has suggested that shock in these cases is the direct result of hemorrhage.

The third, or time factor, is under control of the surgeon to a much larger degree. It is well known that the mortality rate in ruptured peptic ulcer increases with the time elapsed between the occurrence and operation. It is also well known that the course of a bullet through the abdomen may be almost fantastic, and because these patients may appear to be in most excellent condition upon admission, laparotomy is deferred.

The diagnosis of gunshot wounds of the abdomen is usually self-evident by the wound of entrance but this is not always true. The use of x-ray and fluoroscopy in showing the position of the bullet is often a definite aid. These facilities may also aid in tracing the course of the bullet when there is no point of exit, and may give an indication of what viscera were probably injured.

EARLY LAPAROTOMY

Tenderness is nearly always present and vomiting may or may not occur. Rigidity of the abdominal musculature is usual but the abdomen may be soft and flaccid. Pain is present in about 75 per cent of the cases according to Miller's series. The expression is always anxious. Laparotomy remains the only sure method of diagnosing perforations and this should be done at the earliest time possible following injury.

This brings us to a consideration of the operability of the patient. We entertain no doubt that too early operation on cases in shock is just as disastrous as delayed operation in cases of hemorrhage. At times the differentiation may be finely drawn. Roughly

the division between the patient with hemorrhage and the patient in shock may be determined by the latter being listless and lifeless and the former being restless and having air hunger. Miller suggests that if, following the intravenous administration of fluids, the patient rallies and rapidly fails, it is probably due to hemorrhage. He also states that if he does not rally to fluids, he would not stand the additional shock of an operation.

ENGLISH ADVICE

The English writers especially advise preoperative observation and treatment for shock when hemorrhage may be ruled out. Each case, of course, presents an individual problem as to operability but some indications remain constant. Lockwood found that under expectant treatment for a few hours, unless active hemorrhage was suspected, practically every case with a pulse rate of 120 had a fatal outcome. Almost all cases with a red blood cell count between three and four million had much free blood in the abdomen from active hemorrhage. We have found that estimation of the blood protein and specific gravity of the blood by the falling drop method to be more accurate in cases of acute hemorrhage. We suggest that this method be used in determining the amount of acute hemorrhage.

These patients should be placed in bed with as little movement as possible. If after immediate appraisal of extent of bleeding, active hemorrhage is suspected, they should come to laparotomy at once. If moderate or profound shock is present, they should be placed in Trendelenburg position and given complete rest and relief of pain by ample dosage of morphine. External heat should be applied and fluids either physiological saline or five per cent glucose solution should be administered intravenously. Stimulants are to be used as indicated. When the general condition improves, the pulse stronger and the systolic blood pressure elevated to 100, the abdomen should be explored before the second condition of shock supervenes.

The preoperative period should not be prolonged for it has been demonstrated again and again that the best results are obtained when the time interval, from the time of injury to completion of surgical repair, is reduced to a minimum. However, a certain number of cases which terminate fatally would survive if properly treated preoperatively for shock. The two main causes of death in these injuries remain: (1) Extensive hemorrhage associated with shock, and (2) peritonitis.

In connection with the occurrence of peritonitis it is interesting to mention the observation of Senn. The surprisingly small amount of leakage from perforations of the gut, he explains as being due to contraction of the muscular coat for several inches above and below the perforation. This lasts for several hours until fatigue interferes. It has been advocated that the use of one-half grain of morphine will aid this mechanism in the preoperative time.

The foregoing observation may not be in agreement with a large proportion of observers. The present thought concerning the action of morphine on the intestinal tract, is that it stimulates peristalis of the small intestines, having little action upon the large intestines or decreases the activity of the large intestines. However, it is almost always necessary to administer morphine to these patients.

TRANSFUSION

The time element, which is most directly under control by the surgeon, can hardly be over emphasized. Immediately upon the patient's admission to the hospital the surgical staff should be notified and blood secured for transfusion. We have found that a blood bank is most useful in minimizing delay. Laparotomy should be completed at the earliest moment and transfusion at the same time. The urgency for reducing this period is illustrated in a series of 22 cases reported by Prey and Foster of Denver. The average time for these cases that lived was one hour and fifty-three minutes while in those that terminated fatally the average preoperative time was three hours and eleven minutes. In

this series no case requiring more than one hour's operating time recovered. Willis, Wilson, Condick and McGuire also stress the necessity of early and speedy operation.

The use of blood transfusions is of paramount importance. Perhaps the best time to begin the transfusion is immediately after the abdomen has been opened and the bleeding points secured with clamps or sutures. Loria of New Orleans deserts the classification of Mason of dividing his cases into a "small" and a "large" hemorrhage series. He places his into four groups, "slight", "moderate", "massive", and "undetermined."

Type of Hemorrhage	Total	Lived	Died	Mortality Rate
Slight	21	15	6	28.57%
Moderate	42	16	26	61.90%
Massive	60	3	57	95.00%
Undetermined	30	19	11	36.66%
Total	153	53	100	65.36%

These figures, I believe, illustrate the rôle of transfusion in the management of these cases more impressively than would a detailed discussion.

Spinal anesthesia is to be avoided because it may produce shock. Local anesthesia is time consuming and inadequate for the exploratory procedure necessary. Ether is the most widely used because it has neither of the above faults and gives the maximum relaxation. Cold ether is not so desirable as warm ether or ether—N20-02 anesthesia. We have had the opportunity of using sodium pentothal in only two cases. These were so satisfactory that we are tempted to encourage its use.

Transfusion at the time of operation has been mentioned above. Saline or five per cent glucose may be allowed to run slowly intravenously during the procedure.

The incision should be long. This allows greater visibility and ease of thorough exploration which increases the rapidity of the repair. It also permits inspection of the viscera internally with less cooling and with less shock. There is no greater danger of resulting hernia with a large incision than a small one. Suction should always be at hand for use upon opening the peritoneum, since the abdomen is almost always filled with blood.

In cases of abdominothoracic wounds Merelli points out that mediastinal oscillations caused by the pneumothorax add to shock. It is best to suture the diaphragmatic wound first, to allow no increase of the pneumothorax because the abdomen has been opened. The patient improves at once.

Perforations of the gut are best sutured with two layers of number nine silk, the outer layer being a continuous Lambert suture. If there are numerous tears in the stomach or intestine, a continuous lock suture may be used instead of a Lambert. It should be remembered, however, that if this suture is used in the stomach it should be in the direction of the long axis. Some of the writers frown upon resection as being time consuming and increasing the mortality rate and shy away from it unless it is unavoidable. However, this is not generally true and we do not agree with it. End to end anastomosis is the least dangerous.

Wounds of the large gut are apt to leak in the first twenty-four hours due to lax walls, but these are soon walled off due to the immobility of the colon.

Wounds of both the anterior and posterior walls of the stomach may be more rapidly repaired if the anterior perforation is enlarged in the long axis of the stomach and the posterior perforation repaired from the inside. This avoids the tedious difficulty of posterior approach through the mesocolon.

A word of caution should be interposed at this point. The necessity for speed should not result in hasty exploration. This has been shown by Wilson. He reports that in 20 cases which came to autopsy 10 of these showed perforations which had been overlooked at the time of operation. Billings and Waling of Philadelphia reported nine cases of overlooked injuries in 45 autopsies. Wilson also advocates the use of silk sutures for the closure of perforations of intestines. He reports two cases of death from peritonitis resulting from leakage of wounds sutured with catgut

and in no case was there leakage when silk had been used.

In case of perforation of the liver it will usually be found that tamponage alone will be sufficient to control the hemorrhage. Various means of suturing the liver have been suggested but these are time consuming. Furthermore, the incidence of resulting liver abscess following tamponage is probably not as great as formerly supposed.

Wounds of the kidney and spleen are best treated conservatively unless they are quite large or unless large vessels are injured. Nephrectomies should be few. According to Loria ureteral injuries are best left alone. Drainage should be established. Repair is usually unsatisfactory. Resulting fistula as a rule close spontaneously. Bladder injuries should be repaired. If these are not operable a retention catheter should be inserted at once.

Beltram states that injuries to the pancreas require drainage.

Drainage of the peritoneum is not advocated. Since it is impossible to drain the entire cavity the use of drains usually not only increases the morbidity but the mortality rate. However, there are special cases. Drainage should be established in the pelvis when there has been excessive soiling or wounds of the bladder.

POSTOPERATIVE TREATMENT

The postoperative treatment is most important and should be directed by the individual operator. The patient must be protected by the administration of antitetanic and gas bacillus serum. He must be protected from postoperative pneumonia by external heat and CO_2 plus O_2 insufflations. He should be prone until he has fully recovered from shock. Then he may be placed in low Fowler's position. This tends to prevent absorption through the diaphragmatic and omental peritonei. Sedation should be sufficient to quiet the patient. He should be given nothing by mouth until normal peristalsis is restored. Fluids should be given by venoclysis and hypodermoclysis, governed in amount by careful water balance consideration and in type by frequent blood chemistry determinations. Blood transfusions aid the postoperative course. Distention and vomiting may be controlled by rectal tube, gastric lavage, and duodenal drainage.

Care in closure of the incision may improve the postoperative course markedly. In our hands, washing the wound after the fascia had been closed with 50 per cent green soap and sterile water as advocated by Jackson has decreased the incidence of wound infection. Since we have followed this procedure, we have had very little trouble with wound separation.

ABDOMINAL WOUNDS

Shotgun wounds of the abdomen deserve special mention. It is best to follow the classic observation of Bunch. Here, in the distance from which the shot was fired is the prime importance. If fired from a distance the shot have had time to scatter and there are numerous perforations of the wall and of the intestines. However, the shot are small and do not cause the mucosa to pass through the serosa. The sides of this wound will fall together and heal without surgical aid if kept at rest. Because of the number of missiles penetrating the abdomen and the vascularity of the viscera, internal hemorrhage is apt to be free. There are multiple hematomas from the mesentery, making particularly difficult the recognition of gut injury.

If these patients are operated upon, the surgeon succeeds only in shocking the patient and milking infection through the numerous perforations, and the reward will be generalized peritonitis and death.

In this type of injury Willis advocates the following treatment: Put the patient to bed with the head of bed elevated to ten or fifteen degrees, nothing by mouth, morphine sufficient to keep them quiet, fluids by hypodermoclysis and venoclysis, proper sterile treatment of wounds, tetanus and gas gangrene antitoxin, and watchful waiting policy.

If the shotgun wound is inflicted at close range and the shot are massed, the management is similar to that of bullet wounds of

the abdomen. Usually, these patients fall into the class of "massive hemorrhage" and are moribund upon admission.

CONCLUSIONS

1. The severity of gunshot wounds of the abdomen is determined chiefly by three factors: (1) The degree of visceral damage; (2) the amount of hemorrhage, and (3) the time elapsed from the time of injury to the completion of surgical repair.

2. The operating time for the repair of the visceral damage should not exceed one hour.

3. Patient with a pulse rate of 120 or more should be treated expectantly and for shock, until the pulse rate drops below 100.

4. Immediate blood transfusion will greatly reduce the mortality rate of this type of injury.

5. The two main causes of death in this type of injury are: (1) extensive hemorrhage associated with shock, and (2) peritonitis.

6. Anesthesia of choice may be warm ether or ether plus nitrous oxide oxygen. We believe that sodium pentothal will become increasingly popular.

7. A large incision should be used because it will increase the speed of surgery and give more thorough exploration.

8. Drainage should be avoided. It may be used when there has been excessive soiling in the pelvis or a wound of the bladder.

9. Shotgun wounds of the abdomen, inflicted from a distance should be treated expectantly.

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Standards of Optometrists

Standards reached by the optometry profession are apparently still far below those which would justify the confidence of the public or of the medical profession, *The Journal of the American Medical Association* for February 3 maintains in commenting on a study of vision testing made by E. A. Thacker, M.D., Urbana, Ill.

Thacker's study of students at the University of Illinois revealed a considerable amount of defective vision among those examined by optometrists. He also found that practically three fourths of the students were unable to differentiate the ophthalmologist (a physician who specializes in treating disease of the eye) from the optometrist (a specialist, not a physician, who measures vision).

"The average cost of the ocular examination and glasses was only about 10 per cent greater in the ophthalmologist group than in the optometrist group," *The Journal* states. "It is concluded by Thacker that there is need for better medical regulations to determine the efficiency, registration and licensure of physicians representing themselves as specialists. Eventually, he says, if the practice of optometry is to continue in the direction it is now taking, medical schools may find it necessary to absorb the teaching and control of the practice of this profession. Otherwise, when and if the professional standards and ethics for the practice of optometry reach a higher plane, the same cooperation as exists between the practice of medicine and dentistry may develop between the medical and optometry professions."

DISEASE PREVENTION IN EARLY LIFE*

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MEASURES directed toward disease prevention might be divided into (a) those measures provided before birth, (b) those at birth, and (c) those after birth.

BEFORE BIRTH

Persons suffering from hereditary diseases such as blood dyscrasias, muscular dystrophies, and certain nervous and mental diseases such as hereditary optic atrophy, amaurotic familial idiocy and, perhaps, epilepsy and certain types of insanity, should not marry and have children.

The recently enacted public health law, requiring a premarital examination, including a blood test, should do much to prevent congenital syphilis. While syphilis and tuberculosis are not hereditary diseases, marriage of persons in the active stage of either disease should be prohibited. Consanguineous marriage should be avoided.

Proper prenatal care of the mother does much to prevent diseased conditions in her offspring. The modern obstetrician will supervise her diet, including vitamins and mineral intake, her exercise, watch her urine and do a routine blood test early in pregnancy.

Birth control might be considered a prenatal preventive measure. We all know that children, properly spaced, in a small family, have better chances for proper care and development both mental and physical.

AT BIRTH

At birth we see too many cases of cerebral hemorrhage, birth palsies and asphyxia neonatorum. These cases are certainly on the increase. Just why we do not know. The twentieth century rush on the part of everyone, including the obstetrician, is perhaps responsible for some. The use of the automobile, without proper exercise, might be partly responsible. Lack of proper prenatal care, including careful pelvic measurements, is no doubt responsible for some. The injudicious use of forceps, pituitrin, opiates and anesthetics is probably the chief cause. On the part of the obstetrician, it is difficult to know whether more harm is done by allowing "nature to take her course" than by hastening delivery by other means. I believe the modern trend toward elective cesarean section is a good thing and in many cases, is often a life-saving procedure for both mother and baby. It is not my intention to blame the obstetrician with all birth injuries, and I realize these can happen in perfectly normal, easy labors, even in section cases.

AFTER BIRTH

In passing, I merely mention the well-known procedure, required by law, for the prevention of ophthalmia neonatorum.

It is believed that the skin will be in better condition and less likely to be infected with impetigo and pemphigus if the baby is simply anointed with sterile oil and the routine bath postponed for at least twenty-four hours, and longer in the weak and premature. Rodda[1] advises no bath for ten days.

Here might be mentioned epidemic diarrhea of the new born which has visited us twice, first in 1935 and again last year. Means of prevention would be as follows: No visitors should be allowed in the nursery; attendants should wear cap, gown and mask covering the nose. There should be small cubicle nurseries, complete, for not more than four babies two feet apart; if possible one nurse with special training for each cubicle nursery; quick isola-

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tion of any suspect, either in an isolation nursery or the mother's room, and prompt closure of the nursery in case of an epidemic.

Feeding is probably the most important preventive measure. By proper feeding we increase resistance to all diseases and prevent such nutritional diseases as rickets, scurvy, anemia, etc. Nothing takes the place of breast feeding. Besides being the ideal method, certain immune bodies in the mother's milk pass to the infant, protecting it in the early months of life. Syphilis is not a contraindication to breast feeding, but the infant must be promptly removed from the tuberculous mother for the good of both mother and child. It has been shown by Rodda[1] and his co-workers, that where sugar solutions and complementary feedings are withheld, 93 per cent of infants leave the hospital on the breast; whereas only 63 per cent leave the hospital on the breast when these are given. We are too anxious to have the baby gain from birth. I believe the initial loss of weight is more or less physiological, that we should disregard it and give nothing but sterile water until the secretion of breast milk is established. If nature had intended the baby to be fed from birth, the mother would have milk at its birth.

COMPLEMENTARY FEEDING

Next to breast feeding is complementary feeding. Then, of course, the complete artificial feeding with other foods, and the vitamins also, added at the proper time. I begin giving cod liver oil, providing vitamins A and D, at one week. With the many concentrates on the market, one should have no trouble giving these. It has been said that the effects of cod liver oil last only about four hours, in which case it would be better to give this with each feeding. If started early, before taste develops, it may be divided into the twenty-four feeding, or given from a dropper, alongside the nipple, in the breast fed. I begin giving orange or tomato juice, providing vitamin C at two months. A few babies cannot tolerate the juices. Here we have the substitute, cevitamic acid, which is easy to give. Vitamin B is at times indicated, especially in cases of anorexia. Here we have the synthetic thiamin hydrochloride, put up in wine or elixir base, easy to take and very effective.

At six months we start giving disease immunizations. I begin with whooping cough vaccination and have no hesitancy in advising this protective measure. Whooping cough is the worst disease we have in infancy and early childhood, killing more children than diphtheria, scarlet fever and measles combined. It has been pretty well established that this killer is preventable. Until recently, I have used the single strength vaccine, containing 10,000 million bacteria per cubic centimeter, prepared by a well known pharmaceutical house, according to the method of Sauer, giving eight c.c. to children under two years, and 10 c.c. to older children. This I have divided into four, or five bilateral injections of one c.c. each at weekly intervals. In this way, the doses are smaller, always the same and easy to remember. Recently, I have been using the double strength vaccine (20,000 million bacteria per c.c.), giving five and six c.c. respectively in four visits. I have had some severe reactions from the double strength vaccine. Out of several hundred immunizations, I have had about a dozen cases of very mild whooping cough, but on the other hand, I have had dozens escape after a close, indoor exposure. While still advising it, I tell the mother I cannot promise 100 per cent protection. Immunity is supposed to be complete four months after vaccination is completed. How long it lasts we do not know. Unfortunately, we have no test for immunity.

DIPHTHERIA

Diphtheria immunization, both active and passive, is too well known to this group to dwell upon, except to say we are still having too many deaths from diphtheria among preschool children. The new public health law, making diphtheria immunization and smallpox vaccination a preschool requirement, is taking care of the school child, but does not reach the age group in which we have deaths

from diphtheria. This is the responsibility of those of us who supervise the care of children, and we should insist that the child be immunized during the first year of life. For active immunization, I give two doses of the one dose alum-precipitated toxoid at the nine and the twelve month visits, Schick testing six months or one year later. It is the opinion of most men that the child should be re-Schicked at school age. Susceptible children, exposed to diphtheria, should be passively immunized with antitoxin.

SCARLET FEVER

The question of scarlet fever immunization is very much undecided. A few years ago we thought we had a scarlet fever prevention comparable in every way to diphtheria; that is, a toxin for active immunization, the Dick test for immunity, and the antitoxin for passive immunization and treatment. We found the toxin did not actively immunize; that the antitoxin for passive immunization was very often worse than the disease, and that the Dick test is questionable. At present, I am using only the antitoxin for treatment in severe cases, and sulfanilamide will probably replace this.

Much has been written about active immunization and the Dick test. Cooke[2] considers scarlet fever as a scarlatinal type of streptococcus infection; that the product of this strain of streptococcus is an allergen, rather than a toxin causing the rash, and that the toxin given for active immunization is a desensitizing agent, and that the Dick test is not a true test of immunity to septic streptococcus infections. When given for active immunization, scarlet fever toxin is measured in skin test dosage, and is given at weekly intervals of 500 increased to 80,000 for a total of 140,000 to 160,000 S.T.D. The use of formalinized toxin, or toxoid has been reported by Gaylord Anderson[3] who claims better immunization with less reaction and J. Hudson Robinson[4] recommends the intracutaneous method of administration claiming immunization with smaller doses and less reaction.

To summarize, it seems to be the consensus of opinion that since only 12 per cent of the population has scarlet fever, with 1.5 per cent mortality, active immunization is advisable in institutions caring for children, and among doctors and nurses in contagious disease hospitals, but not as a general public health measure.

We are growing careless about smallpox vaccination. The new law is a good thing in this regard and reminds us that the child should have smallpox vaccination before school age. None of the present generation know the horrors of a smallpox epidemic, and one of these days we will wake up in an epidemic with all the horrors of our forefathers.

I do not follow the schedule of the Committee on Immunizations of the American College of Pediatrics, and vaccinate at six months. As stated above, I immunize against whooping cough at six months, and vaccinate against smallpox around two years when the child is out of the diaper age. No shields should be worn. Rivers' glycerolated virus, given intracutaneously, is probably a good procedure. So far, I have not used it.

Each year we have a "mad dog scare." After practically thirty years in practice, I have yet to see a case of rabies. If there is such a disease it is supposed to be preventable, but we must not forget, as shown by one of our members, that antirabies vaccine is also dangerous.

I do not use typhoid vaccine routinely, but think it should be advised in questionable localities, or when the parents travel or send the child to camp, in swimming, etc. Typhoid immunity probably lasts two or three years. We have no test for immunity, but it has been suggested that as long as the Widal is positive, the person is immune.

TETANUS

I do not think it necessary to passively immunize against tetanus every child who has a slight wound, by giving tetanus antitoxin. Active immunization, between two and five years, with tetanus toxoid, is advisable.

This may be given along with diphtheria toxoid, or separately, giving one c.c. at an interval of two months, followed by a third injection at the time of injury. West Virginia's recently enacted "firecracker law" should do much to lessen the incidence of tetanus.

We have no active immunization for measles. After exposure, passive immunization by the injection of whole blood, blood serum or placental extract has proved satisfactory. While this procedure will prevent the disease if given early, except in the very young and weak, we wait five days and aim to modify the disease rather than prevent it, thereby giving the child permanent immunity. If the disease is prevented, the passive immunity lasts one to two years. As yet, we have no test of immunity.

Attempts to prevent poliomyelitis have been unsatisfactory and perhaps dangerous. A recent article reporting on investigations by two California men gives promise of prevention by the use of attenuated virus.

We know that the mortality rate for appendicitis is too high. This is especially true in children where the disease is more insidious, the signs and symptoms different and more obscure, making the diagnosis more difficult, and the operation delayed, resulting too often in a fatal general peritonitis instead of the localized condition as in the adult. Cathartics are still the "cure-all" for ailments in children. The blame for this attitude on the part of the parent should be placed on the physician. Instead of taking time and making a diagnosis, which is often difficult, many of us "work the bowel" for everything from abscessed ears to pyelitis. If the public could be taught not to give cathartics for every "bellyache", the mortality rate from appendicitis would be greatly reduced. Preventive measures in appendicitis should be directed toward the prevention of perforation. Doctor Mont R. Reid of Cincinnati,[5] has made some timely remarks along this line. He says the mortality rate of acute appendicitis in this country, is a national disgrace, and emphasizes the importance of educating both the public and profession in lowering what he calls a disgracefully high death rate. He is quoted as saying that "if the schools could educate one child in each family to the danger of giving cathartics for abdominal pain, the mortality rate for acute appendicitis would be greatly lowered." I can do no better than quote from his summary: "Among the causes of this high death rate from acute appendicitis, are discussed:

"a. The ignorance of the public who delay seeking medical advice after the onset of symptoms; b. The prevalent use of laxatives by the public and prescribed by doctors; c. The gambling of doctors and patients upon the outcome of an attack of acute appendicitis; d. The general idea that the operation of appendectomy is so simple that it may be performed by the occasional or improperly trained doctor; e. Mistaken diagnoses in cases of 'atypical' acute appendicitis, and f. Operative technique, etc."

By preventing the common "cold", we prevent sinusitis, otitis media, mastoiditis, tonsillitis, adenitis, laryngitis, bronchitis and pneumonia. Proper food, including the vitamins, proper clothing, ventilation, air-conditioning, etc., will prevent many of these. I believe upper respiratory infection is caused more often by over-clothing the child, by stuffy, crowded rooms without ventilation, rather by exposure to cold.

While I believe too many tonsils and adenoids are being removed, I also believe the timely removal of foci of infection prevents fatal heart, kidney and joint disease.

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1105 Chesapeake and Ohio Building.

PERORAL ENDOSCOPY: A DISCUSSION OF ITS APPLICATION IN DIAGNOSIS AND TREATMENT*

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PERORAL ENDOSCOPY is the newer term used to designate laryngoscopy, bronchoscopy, esophagoscopy and gastroscopy. Its general usage has not yet been too well established.

The equipment for peroral endoscopy includes instruments which are quite numerous, complex and incidentally expensive. However, we wish to emphasize especially the value of the peroral endoscopic team as it is impossible to do good or safe work of this character without a thoroughly trained team of assistants. A biplane fluoroscope is essential in the solution of certain foreign body problems. In ten years we have had no foreign body problem that required the use of a biplane fluoroscope. However, objects such as straight pins or small nails in the periphery of the lung and especially at the base almost necessitate this instrument before a successful, safe removal can be accomplished.

Anesthesia in adults is always of a local character using butyn or cocaine in 10 per cent solution by topical application. In children no anesthesia is used.

The indications for peroral endoscopy may be divided into diagnostic and therapeutic.

The diagnostic indications are those of lesions of the larynx, trachea, bronchi, esophagus and stomach. These structures are often involved in a diseased process or at least a dysfunction may be present requiring accurate diagnosis. By this method a biopsy, smears, cultures and direct visualization can be obtained. These procedures will usually give accurate diagnostic aid.

The therapeutic indications are those for the removal of foreign body invaders from these structures and certain diseases to which reference is made later. When peroral endoscopy was first used in this country, 98 per cent of the work was for the removal of foreign bodies. However, today this percentage has shrunk to one per cent or less. It is still one of the most urgent indications. However, the therapeutic indications for diseases of these structures are certainly extensive.

The diseases of the larynx which plainly indicate peroral endoscopic procedures are tuberculosis, non-specific granuloma, carcinoma, syphilis, strictures, papilloma, cysts and abscesses. These conditions are somewhat amenable to direct treatment. It is well in this connection to remember that tuberculosis, carcinoma and syphilis of the larynx may and do frequently occur together. This coexistence must be known early if a good result is to be hoped for. Papillomas are considered by too many a simple condition of the larynx. In our experience, however, multiple papilloma in the larynx is a serious problem. Here again an accurate diagnosis must be made before attempting any treatment.

The lesions in the trachea and bronchi requiring peroral endoscopic measures are tuberculosis, carcinoma, non-specific ulcerations, erosions, so-called undetermined causes of hemorrhage, pulmonary abscess, strictures and bronchiectasis. Visualization by radio-opaque substances or bronchopneumonography

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is an important endoscopic procedure. Tuberculosis of the trachea and bronchi is of course secondary to parenchymal disease. However, local tuberculosis, ulcerations and strictures have been and are being successfully treated by electro cautery. Probably pneumonectomy or lobectomy is the safest procedure in the presence of carcinoma of these structures. Ulcers and erosions of the trachea and bronchi are quite common and can cause serious chest complications. We have had four cases in middle age persons of simple erosion of the main bronchi producing pain, cough and hemorrhage which cleared up with the application of medication or electro cautery. Hemorrhage from the air passages does not necessarily mean tuberculosis. We have seen hemorrhage as a result of ulcers and erosions as mentioned above but the most frequent cause of pulmonary hemorrhage from diseases of the lung of non-tuberculous character is bronchiectasis. Recently we had occasion to see a patient with repeated extensive pulmonary hemorrhages who had a fibroid tuberculosis of both apices and on bronchoscopy the bleeding was coming from the left base where there was a marked cylindroid bronchiectasis.

PERORAL MEDICATION

The instillation of medication by the peroral route into the trachea and bronchi is an important form of therapy. There are two methods of administration—directly through the laryngoscope or bronchoscope and indirectly by passing a catheter into the larynx and allowing the medication to flow in by gravity. Stitt of Cincinnati has designed peroral endobronchial lavages with Ringer's solution which in his experience have been of marked aid in certain pulmonary conditions notably bronchiectasis with suppuration. We have used this method and it is a very definite palliative form of therapy.

Lung abscesses both acute and chronic offer a real problem for therapy. In our experience the acute lung abscess if favorably located will respond to bronchoscopic treatment in about 90 per cent of cases. The chronic lung abscesses regardless of their location are much more difficult to treat although occasionally one will see an extensive chronic abscess heal with the institution of bronchoscopy and adequate general measures.

The dilatation of strictures of these structures can be accomplished only by peroral endoscopic methods. In this connection we would like to warn against indiscriminate intubation. We have seen two or three cases in our practice where the intubation tube has been allowed to remain in too long and produce stricture by a perichondritis of these structures. It is our belief that an orderly well done tracheotomy is the safest method to employ where an external airway must be had.

VISUALIZATION BY INJECTION

Visualization of the trachea, bronchi and some segments of the lung is easily obtained by the injection of radio-opaque media such as lipiodol and iodochloral. Again this may be instilled by the direct or indirect method. However, if selective bronchopneumonography is to be done it will be necessary to do the procedures by bronchoscopic technique. Valuable information can be obtained by this procedure.

Bronchiectasis to us is one of the serious pulmonary diseases. In our experience very little more than palliative measures can be employed once the disease is well established. However, with the development of pulmonary surgery and the improved technique now used, the prognosis for cure with lobectomy is indeed enhanced.

Lesions of the esophagus offer some definite indications for peroral endoscopic procedures: carcinoma, ulcers, erosions, bleeding varices, strictures, diverticulum and cardiospasm. Carcinoma of the esophagus is still a problem which has not been satisfactorily solved by the profession. However, the transplanting of radium through the bronchoscope even in these lesions is still a method of therapy. Ulcers and erosions are easily treated by application of medication under direct vision. A most important thing is being

able to rule out a possible malignancy at the site af activity. Hemorrhage from the mouth and especially from the food passages is a symptom requiring immediate diagnostic aid. We have seen varices bleed from the esophagus in the presence of cirrhosis of the liver and in one instance there was no apparent background as there was a simple esophageal varix which had begun to bleed. Stricture of the esophagus whether from extrinsic or intrinsic cause requires great care in treatment. At the present time we have six strictures of the esophagus from lye burns, five of them from suicidal intent. These strictures must be dilated carefully and regularly. Diverticula of the esophagus are of course treated by resection. The endoscopist, however, can be of service even at the time of surgery by placing the scope within the diverticulum and helping the surgeon find the sac. Cardiospasm, or as some prefer to call it preventriculosis, is a condition that up until the present time has been handled adequately by peroral endoscopic methods only. As you know various other methods have been employed but in the main they have been unsuccessful. Apparently the Mosher and Tucker cardiospasm dilators are the two instruments used in the United States. In our hands they have been successful.

The stomach has not been available to endoscopic studies except the cardiac end until the invention of the Schindler flexible gastroscope. This instrument has placed the stomach in an accessible position for study by the peroral endoscopist. Here the lesion may be seen and studied by direct vision with no more handicap to the examiner than is offered the urologist in studying a bladder. This instrument is quite expensive and until its use is better understood and appreciated by the general profession small centers will be unable to have it available. Foreign bodies in the stomach of course occasionally offer real problems. The majority of these can now be removed, however, by a judicious application of instruments already available in the average peroral endoscopist's equipment.

SUMMARY

1. The term peroral endoscopy is suggested to replace that used previously designating laryngoscopy, bronchoscopy, esophagoscopy and gastroscopy.

2. The importance of a well trained team in doing peroral endoscopy is emphasized.

3. Anesthesia is unnecessary in doing this type of work except in adults where a local anesthesia is entirely adequate.

4. The change in indications for peroral endoscopy is pointed out. Previously 98 per cent of the work was for foreign bodies and today only one per cent.

5. The diagnostic importance of peroral endoscopic procedures is stressed.

6. The therapeutic indications for peroral endoscopy are briefly covered.

7. Selective bronchopneumonography with radio opaque material is best accomplished by means of the bronchoscope.

8. The advent of the Schindler gastroscope has given us an access to the stomach equal to that enjoyed by the urologist in bladder studies.

Empire Bank Building.

Vitamin K For Hemorrhage

The control of hemorrhage in ten patients suffering from a deficiency of prothrombin, the blood clotting factor, by administration of a synthetic vitamin K is reported by Jonathan E. Rhoads, M. D., and Maurice T. Fliegelman, M. D., Philadelphia, in *The Journal of the American Medical Association* for February 3.

The vitamin K substitute used is known at present only by its chemical name of 2-methyl-1,4-naphthoquinone. The results obtained by the Philadelphia men, they say, seem to conform the high potency demonstrated for this compound in investigations on chicks. Three of the patients in whom a satisfactory response was obtained had failed to respond satisfactorily to various forms of vitamin K. In six cases the clotting time returned to normal within twenty-four hours or less after the initial dose of the substitute. The substance, the two doctors say, "appears to be the most potent agent for the treatment of prothrombin deficiency so far employed clinically. No toxic (poisonous) effects were observed in this group of patients."

THE MIDDLE EAR FROM THE POINT OF VIEW OF INFECTION*

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THAT infection of the middle ear, acute or chronic, with its immediate or remote complications, is an important phase in the practice of medicine is a fact only too well known to all of us. Such infection, directly or indirectly, makes up the major part of otology.

Because of the anatomic location of the middle ear and its intimate relationship with the bony, often highly pneumatic or diploetic, mastoid appendage, the lateral sinus, the labyrinth and dura with its intracranial contents, infection within the middle ear, under the most ideal conditions, should be feared!

Any approach which would attempt to abbreviate morbidity, minimize complications, usually of a serious nature, thus reducing mortality as well as lessening chronicity in one form or another, should be worthwhile.

In this presentation I attempt to summarize twenty years' experience with otogenous infection, to extract the good and to leave behind the bad.

SCIENTIFIC OTOLOGY RELATIVELY RECENT

The development of temporal bone surgery has been relatively recent; within the lifetime of the older members of our present generation. It has been one of the most valuable advances in surgery. While it is true that an otologist in the full sense of the word is expected to be proficient in the technique of temporal bone surgery, it is equally true that otology today has a duel rôle: To perfect its surgical technique and at the same time to avoid surgical intervention, whenever it is in the interest of the patient so to do.

In presenting my viewpoint on middle ear infection, I find it desirable to divide my experience into three periods:

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1. The years 1919 to 1925 inclusive, a period of seven years, in which I was not particularly sinus conscious and regarded the middle ear as more or less a separate entity.

2. Nineteen hundred and twenty-six to 1934 inclusive, a nine year period, in which I grew more and more sinus conscious and began to look upon the middle ear, from the point of view of infection, as just another paranasal sinus.

3. Nineteen hundred and thirty-five to date, a period of a little over four years in which I have become convinced that complications as well as ill after effects of middle ear infection should be as rare as intra-abdominal complications should be in appendicitis, provided, however, that each condition is both promptly recognized and properly cared for.

The fortunate development of chemotherapy, such as sulfanilamide and its derivatives, used when indicated and properly administered, is something we otolaryngologists should be very grateful for. It has been a weighty factor in having reduced complications to a lower level.

THE "SINUS" VIEWPOINT

Before discussing the 1,268 cases of middle ear infection reported herein, I wish to set forth my viewpoint and give the reasons which have led to such a conclusion.

By some otology is considered one specialty and rhinolaryngology another, and there are specialists who limit themselves to either one

*Read before the Eye, Ear, Nose and Throat Section of the West Virginia State Medical Association, White Sulphur Springs, July 10, 1939.

or the other branch of medicine. Such separation from the point of view of infection is, in my opinion, inconceivable for the middle ear, when we consider infection, is just another paranasal sinus! The otitis media quite often is secondary to another paranasal sinus infection and will clear up much sooner and with fewer complications, if the primary sinus infection is recognized early and properly cared for.

The paranasal sinuses in the ordinary sense of the word, are nothing more than empty bony chambers lined with mucous membrane and communicating with the nasal cavity through their natural openings. In many species of lower animals such cavities harbor turbinates covered with olfactory cells and thus play an indirect rôle in the important function of smell upon which sense the animal's very life is dependent. In man, from that point of view, these cavities may be looked upon as inherited empty "warehouses", a nuisance in many instances. The middle ear chamber, on the other hand, if it does not have such an important function in the lower animal, in man it performs a very important part of the hearing mechanism.

In sinus infection our aim is to remove that infection. When we deal with an otitis media, not only are we concerned with the eradication of the infection, but we are also very much interested in the preservation of physiologic hearing.

My observations have led me to the conclusion that many more middle ear infections than is commonly believed, are secondary to another underlying sinus infection.

CHILDREN VERSUS ADULTS

Especially does this seem to be true in the young, in whom, because of the preponderance of lymphoid tissue, coupled with the difference in the anatomic structure of the eustachian tube, infection by direct route is more common. When one or more of the paranasal sinuses is infected, infected material at one time or another is likely to find its way into the nasal cavity and nasopharyngeal space. The short, wide and more horizontally directed tube in the infant or child is always ready, on the slightest provocation, to transmit infected exudate into the middle ear, especially in the acts of coughing or sneezing, symptoms often associated with sinusitis and upper respiratory infections. Adenoid tissue, especially when diseased, lodged at the eustachian tube orifices, greatly facilitates such pathogenesis.

The points I wish to emphasize are that a high percentage of cases of otitis media is secondary to an underlying sinusitis; that the middle ear involvement is often a complication of the sinusitis; that the otitis media will not properly respond to treatment, and that the patient under such circumstances is more liable to further complications, such as mastoiditis, sinus thrombosis, labyrinthitis, meningitis, or brain abscess, unless the underlying cause is removed.

Likewise, middle ear chronicity is more likely to ensue. Also, impairment of hearing is more probable because of eustachian tube closure with its vicious cycle of ill effects, such as diminished intratympanic aeration, absorption of the residual air with the resultant negative pressure (cupping), causing the surrounding vessels to "pour" some of their contents into this "vacuum." Such fluid contains fibrous tissue elements, including lymphocytes capable of transformation into fibroblasts, the precursors of connective tissue fibers, ultimately leading to middle ear fibrosis, ossicular ankylosis, etc.

In this connection it may be of interest to point out some additional characteristics of the middle ear of the very young.

DEHISCENCES AND THEIR CONSEQUENCES

Dehiscences of the tegmen tympany are not as rare as is commonly supposed. In case of such dehiscence and the direct contact of middle ear infection with the dura, one can explain the signs and symptoms of meningeal irritation one encounters now and then in otitis media in the very young, at times amounting to a clinical picture of meningitis.

I wish to cite seven such cases, three of which came to my attention directly and four

indirectly. The latter were all diagnosed "cerebrospinal meningitis" by their respective attending physicians. As a bystander I suggested the investigation of the paranasal sinuses, the middle ears, of course to be included. There was acute suppurative otitis media in all seven cases and demonstrable sinusitis in five. Six of the seven children rapidly recovered after myringotomy was performed and drainage of the sinuses, when these were involved, was established. In one case mastoid surgery had to be resorted to. This patient also recovered.

EMBRYONAL TISSUE AND ITS SIGNIFICANCE

Another striking middle ear characteristic in the very young is the presence of embryonal tissue. Such tissue makes an excellent culture medium and is particularly subject to infection and resulting fibrosis. When infected, a great deal of absorption takes place and, from that point of view, it is not difficult to associate the syndrome of latent mastoiditis (embryonal tissue is also found in the antrum and even mastoid proper) in infants with persistent gastrointestinal disturbance, which promptly subsides following mastoid surgery.

The tympanic "sinus", because of its anatomic location, when diseased, is one of the most dangerous paranasal sinuses with reference to complications. Nevertheless, by virtue of the same anatomic location, it offers some compensation, by being one of the most accessible sinuses for both examination and drainage, when acute infection is present. One of its walls, the drum, happens to be membranous, easily inspected and easily incised, when the indication for such a procedure is present.

The universally popular remedy of phenol in glycerine is a mixture not only used extensively by the laity, who purchase the mixture over the drug store counter, but prescribed equally as often by the average family physician whenever earache is complained of. This concoction is also quite popular with many pediatricians and even with some practicing otologists.

It is surprising how some obsolete, useless remedies of the premicroscopic era are not only still prescribed by the medical profession, but are given paragraphs in textbooks! Seriously speaking, what significant connection is there between an otitis media, a condition in which bacteria have successfully invaded at least the mucosa of the tympanum and a mixture of phenol in glycerine, poured into the external auditory canal, which is altogether separated from that infected chamber by a partition?

One may see fatal intracranial complications starting with a history of earache treated by such mixtures "poured" into the ear canal. When subsequent studies of histologically sectioned temporal bones of such cases now and then reveal evidence of suppurative labyrinthitis, cerebellar abscess or meningitis, with the tympanic membrane of the involved ear intact—one wonders and asks himself: "Is there any connection?"

I wish to cite two such cases, both children, eleven and eighteen months old respectively. "Perforation" in both cases finally did take place, but in the wrong direction. The stapes was necrotic and exfoliated, the labyrinth was invaded through the oval window! The history in each case revealed "ear drop" therapy.

WAGENS' REPORTS

At the 1937 annual meeting of the American Otological Society, Wagens reported the microscopic examination of the petrous bones of twelve children who died from meningitis. The significant fact in his report was that in all these children but one there was a definite otitis media. The offending micro-organism of the middle ear infection in six of these cases was recovered on culture of the spinal fluid.

In citing as many as 1,268 cases of middle ear infection, because of time limitation, details obviously will have to be omitted and only certain salient phases pointed out, especially those which will help me to arrive at certain worthwhile conclusions.

In the acute series there were 987 cases and in the chronic group 281. In the first

(1919-1925) period there were 352 acute and 90 chronic cases. In the acute group there were 277 children and 75 adults, while in the chronic cases the numerical order was reversed, 14 children and 76 adults. In the acute group of children 94 were brought in with a history of phenol in glycerine therapy and spontaneous perforation of the drum. It is significant that of the 33 surgical cases (antrotomy, etc.) 21 were of the spontaneous drum perforation variety. There were four deaths, three with meningitis and one with labyrinthitis and cerebellar abscess.

The 75 acutely sick adult cases presented the following: Eighteen came in with spontaneous perforation of the drum (phenol in glycerine was practically the only therapy received). There were eight surgical cases in this group with one death from a temporal lobe abscess. Five of the eight surgical cases were of the spontaneous drum perforation variety. In the chronic group of this period there were 14 children, nine of whom were treated surgically. Eleven of the 76 chronic adult cases were operated upon. There was one death. The patient was a diabetic and died in diabetic coma.

1926-1934 CASES

In the second (1926-1934) period there were 426 acute and 128 chronic cases. In the acute group, there were 344 children and 82 adults. Of the children, 107 had had spontaneous drum perforation. The vast majority of these had had "ear drop" therapy and 228 had demonstrable sinusitis. Of the 82 acute adult cases, 27 came with spontaneous drum perforation and 51 showed evidence of sinusitis. In the chronic group there were 13 children, nine of whom had sinusitis and 115 adults, 82 of whom had sinusitis in one form or another. With care of the sinusitis in addition to that of the otitis media, the course in the majority of cases was markedly shortened. There were patients whose ears drained for at least several weeks prior to their submission to my care, some of whom were advised to undergo mastoid surgery. In many of these the involved ear was "bone" dry and the drum closed within less than a fortnight, in some instances less than a week!

Surgical intervention in this period dropped about 50 per cent, as compared with the first period. Only 19 children and five adults were operated upon in the acute group. There was one death from meningitis. Of the 24 operative cases, 11 came with spontaneous perforation of the drum and a history of "ear drop" medication. In the chronic group there were only seven operative cases and no mortality.

In the last (1935 to date) period there were 209 acute and 63 chronic cases. In the acute group there were 158 children, 43 of whom were admitted with spontaneous drum perforation and 92 with demonstrable sinusitis. Of the 51 adults, 16 came with spontaneous drum perforation and 35 showed evidence of sinusitis. There were only five surgical cases in this last period with no mortality. Of these, three had had spontaneous drum perforation. Complications of middle ear infection in this period, which called for surgical intervention was only a little over three per cent as compared with five and one-half per cent in the second period, and 12 per cent in the first period.

Of the 63 chronic cases five were children (four of whom had sinusitis) and 58 adults (49 had sinusitis). There was only one operative case in this group. Cholesteatoma was the indication for operation.

THE VALUE OF CHEMOTHERAPY

In addition to the standard care for otitis media and sinusitis in 47 cases I have had occasion to employ sulfanilamide and its derivative prontosil and later neoprontosil. The offending micro-organism in 45 of these patients was the hemolytic streptococcus and in two, pneumococcus type three. Twenty-three in this group had sinusitis. The response of the vast majority of these patients to the new drugs was very striking, and in a few instances phenomenal. Fourteen cases recovered completely within a week. Three weeks was the longest period. There were five such cases.

There were three cases with enough evidence of mastoid involvement to warrant surgical intervention. Following the use of sulfanilamide, these also recovered without operation.

Prontosil (later neoprontosil) was administered intramuscularly every four hours in all cases. Sulfanilamide was also given by mouth at similar intervals. The dosage was determined by body weight and the blood was checked daily, or every other day, depending upon the severity of the case. There were only three cases with moderate cyanosis. No other ill effects of significance were noted.

With sulfapyridine, the newest derivative of sulfanilamide, my experience thus far has been both limited and too indefinite to report. However, reports from many sources are extremely encouraging. This newest addition in the drive against specific bacteria should be a worthwhile aid in pneumococcic infections of the paranasal sinuses, including the middle ear.

SUMMARY AND CONCLUSIONS

1. The middle ear from the point of view of infection is just another paranasal sinus.

2. The incidence of otitis media secondary to an underlying sinusitis is much higher than is commonly suspected.

3. The course of otitis media is considerably shortened and the incidence of surgical intervention is markedly reduced when the sinusitis is recognized early and treated properly. The same statement holds true for chronicity and complications.

4. The surgical cases show a high percentage of patients who had had "ear drop" therapy and waited for spontaneous ear drum perforation.

5. The practice of freely prescribing carboglycerine or other concoctions for otitis media is both criticized and discouraged.

6. It is acknowledged that some cases, no matter how soon a proper myringotomy is performed and an underlying sinusitis is treated, such treatment to include good general care, still progress to mastoiditis or develop other complications. Anatomic abnormalities of the temporal bone in such cases seem to be more at fault than the virulence of the infecting micro-organism. Either late or improper care of otitis media causes a much higher percentage of complications.

7. Dehiscences in the very young are not uncommon and meningeal irritation, now and then amounting to a clinical picture of meningitis, may be associated with acute otitis media and sinusitis.

8. The recent addition of chemotherapy is acknowledged as a remarkable aid in the practice of otorhinology. In a series of 47 cases the course was markedly shortened and all recovered without surgical complications. Three of these cases with mastoid involvement, which without sulfanilamide would have been operated upon, recovered without recourse to surgery.

9. Twenty years experience with otic infection (1,268 cases) is divided into three periods, in accordance with certain viewpoints of the author.

DISCUSSION

Dr. F. O. Marple, Huntington: Dr. Seletz has emphasized some very salient facts in dealing with middle ear infection. The important thought is that one should keep these principles in mind when dealing with infection in the temporal bone. Purulent otitis is usually a complication and not a primary thing, and frequently there is paranasal sinus involvement with the middle ear as a complication. Naturally, if we expect good results from treating the middle ear we will treat the sinus accordingly.

Careful observation will, as a rule, guide one as to the time when it is necessary to operate.

To gain the benefits of modern chemotherapy it is important to secure early identification of the infecting organism.

The rôle of sinus infection in the causation of cough is always worthy of emphasis.

I was amused by the mention of phenol and glycerin. Of course I do not use it; I do not use drops in the ear at any time; I never use drops in the ear after I open the middle ear. I think the use of any kind of drops is wrong. I want to keep everything out of the canal if I can, because I am hoping to get free drainage, and glycerin certainly

will not facilitate that; it is too thick and perhaps blocks the drainage.

Dr. J. Hallock Moore, Huntington: The essayist is to be congratulated upon considering the ear as an accessory nasal sinus. In approximately ninety per cent of the cases the sinuses are involved when there is a middle ear infection; when the sinus is cleared up it facilitates the clearing up of the middle ear infection.

Dr. Marple was quite emphatic about the use of drops. He does not want anything in the middle ear. I have often seen the secretion from the middle ear block the myringotomy opening, and the best thing to use is hydrogen peroxide, full strength. I have used it for years and I do not think it has ever caused any harm. I put it in and let it boil up the infectious matter out of the myringotomy incision and the patient's mother or wife can wipe it out with a small tampon and not cause any trauma to the structures. After that, I like 10 grains of boric acid, 50 per cent alcohol and aqua destillata, q. s. ad., ounces one, to instill into the ear.

Dr. Sobisca S. Hall, Clarksburg: It is not only a matter of sinus drainage but a matter of ventilation, because the lymphatics can become thrombosed and you can actually have, by retrograde thrombosis, an exudate into the middle ear through nothing but lymphatic mechanism. I refer you to Valy Menkin's article on "Thrombosis of the Lymphatics" in the Proceedings of the Rockefeller Institute.

I would be the last man to deprecate the use of sulfanilamide, but are we by avoiding mastoid surgery in certain of these patients making it possible to get a larger area of hearing? Dr. Thomas and I have three cases in our own files who avoided mastoid surgery and recovered only with a tremendous loss of hearing.

Dr. V. E. Holcombe, Charleston: I should like to mention three cases that I have encountered in the last month in which there were definite changes in the mastoid cells, consisting of blurring or indistinctness of the intercellular septa, and under the administration of sulfanilamide all three have cleared up completely, clinically speaking. X-ray pictures were made in all three of these cases, and the x-ray men said that from an x-ray standpoint they were surgical cases, but they were given sulfanilamide and they all cleared up clinically.

Dr. H. V. Thomas, Clarksburg: In regard to the use of sulfanilamide it seems that we should be on our guard in relying too much upon a new drug which, after all, is still pretty much on trial.

I should like to ask the essayist a question in regard to the reversal figures he mentioned. In his investigation of those adult patients, how many of them came up from youth?

Another point which I would like to mention in passing: We keep speaking about the dehiscences in the bone; we speak of that in ophthalmology, we speak of it particularly in otology. We knew from recent investigations that the meninges are an integral part of the bones of the skull. These little openings that have been called dehiscences probably are nothing more than connective tissue or connecting points, and it is only logical that extension should take place through these channels.

I would like to say a word in defense of glycerin and phenol. Remember that glycerin is hygroscopic, it does take up water and does dilute, to a certain extent. Just how much the phenol sterilizes I am not able to say, but I do believe from experience that it plays a part.

Dr. Seletz, closing the discussion: I spoke about ear drops before the perforation of the drum, and then I mentioned complications. It does no injury, but time is lost. When you have a middle ear infection you have pressure in all directions. When you have dehiscences you do get a deeper infection of the periosteum, back toward the mastoid cells, sometimes toward the dura; especially in youngsters we have dehiscences.

With reference to the drop method after perforation, I find it much better to use slight eustachian tube inflation and the thing clears up much sooner, sometimes in a few days, and it is not dangerous if you do it very lightly and are careful that you have no pus in the nasal cavity, of course. It is not done when you have a sinus infection.

When we have a bone abscess, sulfanilamide is very dangerous. To use sulfanilamide promiscuously is a very dangerous thing. Use sulfanilamide as an aid. It is a remarkable aid, but do not depend upon it. I quite agree with Dr. Hall's remarks.

If I did not mention it in my paper I will say now that ventilation as well as drainage is very important.

Dr. Holcombe pointed out that surgery could be avoided. However, in spite of sulfanilamide, we

still have the same indications for mastoid surgery that we had before.

As to Dr. Thomas' question, the ratio is much higher in children. It may be because I was connected with a number of pediatricians that possibly my share was a little higher than is usual, but the fact remains that the young are more subject to ear infections, because of the lymphoid tissue, adenoids, tonsils and what not.

I have already spoken of dehiscences, but we know that up to the age of three we find them quite often in a fairly good percentage. We know through the ossification process some centers bridge over and sometimes they fail to bridge over.

GELATIN-EPINEPHRINE MIXTURE AS A MEDIUM FOR POLLEN ADMINISTRATION

By FREDERICK C. REEL, M. D.
Charleston, West Virginia

THE use of gelatin-epinephrine, described by Spain, Strauss and Fuchs[1] as a medium for the administration of pollen, occurred to me to offer an excellent possibility for avoiding constitutional reactions.

Reference to some of the literature showed that the idea of securing delayed absorption of pollen antigen had been followed by Naterman,[2] with three of seventeen patients having constitutional reactions. Feinberg and Bernstein[3] report their study since 1931 on various substances for slowing absorption, and mention precipitated pollen albumin suspended in oil, various oil-water emulsions and almond oil-gum dammar emulsion.

Their results were reported as comparable to Naterman's, but fell short of their desire in that they wanted something that would allow large dosage with absorption so slow as to permit longer intervals between injections and still avoid constitutional reactions.

Dilutions of ragweed were made with this gelatin-epinephrine mixture giving 100, 1000 and 10,000 units of mixed ragweed (Lederle) per c.c. and having the equivalent of 15 minims of 1:1000 epinephrine per c.c. It was not found necessary to use the weaker dilutions, as this treatment was instituted at the beginning of the ragweed season and for patients who had had preseasonal treatment with buffered saline pollen.

Four patients received gradually increased doses up to 4,500 units during the ragweed season and all received at least two doses during the very height of the season. One of these patients had perennial asthma due to dog dander sensitivity. None of the patients had a single constitutional reaction; the site of injection was always tender to touch and persisted a little longer than that due to injections of pollen in the ordinary buffered saline medium. These cases were all satisfied and will receive the same treatment next fall when I hope to have a larger group to study.

THE AUTHOR

Dr. Reel, University of Cincinnati; did postgraduate work at Washington University and New York Eye and Ear Infirmary. Specialty, Ear, Nose and Throat.

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Dilantin Sodium For Epilepsy

The drug, dilantin sodium, reduced the severity and number of convulsions in ten of twenty-five patients with spontaneous or true epilepsy, Joseph L. Fetterman, M.D., Cleveland, reports in *The Journal of the American Medical Association* for February 3.

Epilepsy of spontaneous origin is one that is not due to organic or nervous system injury. Two of the ten patients benefited by the treatment were completely freed of convulsive attacks.

AUTOTRANSFUSION IN TRAUMATIC RUPTURE OF THE SPLEEN

By PHILIP JOHNSON, M. D.
Fairmont, West Virginia

BECAUSE of the extreme importance of being at all times prepared to administer blood to a patient at the time of and during an operation, a report of the following case is being made. This case, involving autotransfusion in traumatic rupture of the spleen, serves to illustrate the necessity of such preparedness in emergencies.

Hester Dent, white girl, age eleven, gave a history of having fallen while running, striking her left side against a brick lying on the ground. The family stated that the patient was not unconscious at any time following the accident, but that there was marked cyanosis and severe pain of the abdomen.

When I saw the patient about one hour later she was somewhat more quiet, but still complained of severe pain. The patient's pulse was not rapid but somewhat weak. There was at this time no pain in the left scapular region. It was my impression that the patient had suffered a severe solar plexus blow and that symptoms of shock were due to this.

Operative Specimen, Ruptured Spleen

I was called early the next morning and the family stated that the patient had had severe pain throughout the night with vomiting and extreme thirst. Examination revealed the pulse to be 140, weak and thready. The abdomen was distended, with dullness in the left flank and non-shifting para vertebral dullness. The mucous membrane was pale, and severe pain was complained of in the left scapular region.

THE AUTHOR

Dr. Johnson, graduate University of Maryland; interneship and postgraduate work at St. Agnes Hospital, Baltimore and Fairmont Emergency Hospital. Junior Fellow American College of Surgeons.

The patient was admitted to the hospital immediately following this examination with a presumptive diagnosis of traumatic rupture of the spleen. At this time members of the family were secured as donors, and a technician examined the blood in order that there might be a suitable donor available. On the patient's entry into the hospital the WBC was 26,000; HB, 70 per cent; RBC, 4,600,000. Immediate laparotomy was imperative.

At the beginning of the operation 10 per cent glucose was given intravenously. A transfusion apparatus consisting of a suction tip attached to a suction machine was prepared. An incision was made to the left of the umbilicus extending from the tenth rib to four inches below the umbilicus. At this stage of the operation the peritoneum was seen to be of a bluish color. A small incision was made through this structure followed immediately by a gush of blood. The suction tip was inserted into this incision and 1,000 c.c. of blood removed. This was mixed with 20 c.c. of two and one-half per cent citrate solution and transferred to the glass receptacle containing the glucose solution, which was at this time being given intravenously. On examination the spleen was found to be ruptured completely across. The anterior portion was located adjacent to the stomach, and four inches away, the other half was located. Without much difficulty the

gastro ligament and the lienorenal ligaments which contained vessels were ligated with triple ligatures of number two catgut and the spleen was removed.

Hot packs were then introduced to control slight oozing. Clots were removed and the incision was closed except for a small penrose drain which was inserted. The patient made an uneventful recovery.

Where diagnosis of a ruptured spleen has been made or is suspected, or in the case of ruptured ectopic pregnancies, torn mesenteric vessels, or in any condition where there might be hemorrhage in the abdominal cavity without contamination, such as punctured wounds, ruptured intestines and the like, transfusion apparatus should be in readiness, thus enabling the surgeon to perform an immediate autotransfusion. Time saved by this procedure is often life-saving to the patient.

POSTGRADUATE RECOMMENDATIONS FOR WEST VIRGINIA*

By GEO. M. LYON, M. D.
Huntington, West Virginia

ALL county societies shall elect or appoint rotating program committees to organize and plan diversified county society scientific programs over a long period of years in order to cover without needless repetition and with appropriate balance the various subjects that should be impressed in graduate education.

Such committees should have three to five members elected to serve from three to five years in rotation. When such committees are so organized it will be their responsibility to maintain contact with, and to cooperate with the Committee on Postgraduate Clinical Studies. It will be through this particular county society committee that contacts with the state committee will be carried on. The local committee will be the direct representative of the state committee on Postgraduate Clinical Studies. The local society committee is to be known as the Society Committee on Programs and Postgraduate Clinical Studies. It is desired that these committees be appointed as soon as possible in order that they may familiarize themselves with the problems of this work and with the activities of the state committee so that by January of 1941 it will be possible for them to have their local society programs and activities developed in accordance with a state-wide plan on postgraduate clinical studies if such plan is adopted at the state meeting in 1940. Information coming from the state committee will each time be sent to members of the local county society committee for their attention and local interpretation. The county societies are encouraged to use the facilities of the office of Mr. Savage for the development of society programs in accordance with details which will be announced later.

The second recommendation of the Committee on Postgraduate Studies is that during the year of 1940 their societies actively cooperate with Dr. Nale of the State Department of Public Health in the carrying out of such postgraduate clinical conferences as may be developed by him under the guidance and assistance of the State Committee on Postgraduate Clinical Studies during the year of 1940.

Details with regard to the 1940 program will be made available as soon as possible. County societies appointing the program committees as recommended above will be able to assist materially in the development of this program during the coming year and the experience gained during this year should be of help in introducing them to some of the

*Dr. Lyon, chairman, Committee on Postgraduate Clinical Studies, presented the above report at the Annual Conference of County Society Secretaries and Presidents at Charleston on January 6, 1940.

problems which will be encountered later should the five year program be launched as now proposed at the beginning of 1941.

The third recommendation of the committee is that fall clinical sessions be put on each year for the various sections and specialties of the state association under the sponsorship of the state association in order to limit the sectional activities at the annual meetings of the association.

The increasing pressure placed on the state program each year for more time to be alloted to the various sections and specialties presents a problem which merits definite consideration. The Committee on Postgraduate Clinical Studies feels that much good could be accomplished by having the annual state meetings planned almost primarily for the general physician, and that the special phases of medicine which are presented at this time, all be presented from the viewpoint of the general physician, and that the specialists be requested to attempt at this time to be interested in the problems of the general practitioner and his viewpoint. There has been very much of a tendency to make state society programs more and more specialized in character and this has tended to bring the specialists in a group of their own, scientifically quite away from the members interested primarily in general practice, and those in other specialties. A broadening interest is probably much more needed by the specialist than it is by the general practitioner. There should be a closing of the gap which seems to be widening between the specialists and the general practitioner. Their meeting on a common ground at the state society meetings should be helpful in this way.

The introduction of fall clinical sessions for the various specialties and sections of the state association would provide for these specialists an opportunity for having a short, snappy, but intensified "clinical day" devoted entirely to their own specialty problems. This could rather easily be worked out in the fall, because many of the specialties have either national, district or state memberships which could to advantage meet for a state or district clinical session at the time of this fall clinical session. This committee feels this would be a definite step forward and would help to make possible the attainment of the objectives for which the committee is working. An expression from the conference of county secretaries and presidents would do much to bring about this apparently desired change. The fact that the committee is composed almost entirely of specialists indicates that they are truly aware of the difficulties in the present situation, and it has seemed most logical that this recommendation be made at this time with hopes of action at such time as it can take place properly.

X-ray of Chambers of Heart

A method for taking x-ray pictures of the chambers of the heart and the blood vessels of the lungs and chest, thus making for more precision in the diagnosis of ailments affecting those parts, is described by George P. Robb, M.D., and Israel Steinberg, M.D., New York, in *The Journal of the American Medical Association* for February 10.

The two men point out that although the x-ray has become almost indispensable to the accurate diagnosis of heart and lung diseases it has given an incomplete picture because the four separate chambers of the heart and their component parts are shown by one shadow and the blood vessels of the chest are seen indistinctly if at all. Diagnosis therefore has had to rely on such indirect evidences of disease as alteration in the size, shape and pulsation of the heart and blood vessel shadows.

By injection of a harmless substance, diotrast, which is impenetrable to the x-rays, and taking x-ray pictures as the substance passes through the heart and blood vessels of the lungs and chest, the two doctors obtain pictures in which the involved parts stand out in contrast to their surroundings.

"No serious consequence," Drs. Robb and Steinberg point out, "has followed 486 injections of 233 patients, many of whom were seriously ill. The method is safe and practical. The technique is exacting, requiring dexterity, precision, speed, teamwork and strict adherence to detail. Proficiency, however, can be acquired through training and practice, and successful performance should be within the capability of every medical center."

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

The value of the tuberculin test as a means of finding cases of tuberculosis by mass testing has lately been questioned. At the last annual meeting of the National Tuberculosis Association a symposium on the tuberculin test and x-ray was presented. One of the speakers summarized the values and limitations of the tuberculin test in a paper, from which these abstracts are derived.

The queries and doubts concerning the tuberculin test that have arisen within the last two years have had a healthy effect on our anti-tuberculosis campaign in forcing us to review our current procedures and test the validity of past beliefs. This paper omits all discussion of the tuberculin test except as a means for finding cases of tuberculosis.

In guinea pigs the test is practically infallible. The success of the campaign for eradication of bovine tuberculosis, based, as it is, on the tuberculin test, is a strong empiric argument for the practical value of the test. The almost constant finding of tuberculous lesions in cattle slaughtered because of a positive tuberculin reaction, and the failure to find tuberculosis in the routine inspection of millions of cattle not reacting and killed for meat production, is tangible evidence for its specificity and adequacy. In certain other animals, however, tuberculin allergy is far less conspicuous.

Tuberculin sensitivity in man can never be studied with the same thoroughness as in guinea pigs or cattle. However, observations on children vaccinated with BCG have enabled us to study the results of artificial infection and its relation to tuberculin sensitivity and these studies indicate that after very mild infection an overwhelming majority of children become tuberculin-positive.

We are here not concerned with the total number of tuberculin reactors that may be detected, but rather with the detection of significant tuberculosis by the use of the tuberculin reaction as a preliminary screen. ("Significant tuberculosis" or "a case of tuberculosis" in its public health sense, is restricted to infection with the tubercle bacillus which has proceeded to the point where it has produced symptoms recognized as those of clinical tuberculosis, or has brought about changes demonstrated by x-ray examination that are considered to indicate tuberculous disease.) This definition places heavy responsibility on x-ray examination. If the tuberculin test is used at all in case-finding, it is as a screen to obviate the necessity of the more expensive x-ray examination. (In young adult groups, one-third or more of those tested with tuberculin may not react, and these need not be x-rayed.) It is believed by some that, on the basis of cost alone, saving x-ray examination of one-third of the subjects would not counterbalance the cost of the tuberculin test.

What does the standard first and second dose method of tuberculin testing (fully defined by the author) detect and overlook? Of 610 cases of pulmonary tuberculosis diagnosed in the Henry Phipps Institute during five consecutive years, all but one reacted to tuberculin. Among the 609 reactors, 94 per cent of the white, and 96 per cent of the colored reacted to the first (minimal) dose. (O. T. used in earlier, P. P. D. in later years.) However, in other similar clinics and in hospitals attention is drawn occasionally to cases of unquestioned tuberculosis, even with positive sputum, in which the reaction is negative. Explanations for these exceptions are easily found; the fact remains that cases of anergy in typical hospital patients are probably few.

However, clinic experience is not representative of the conditions of case-finding as they occur in mass surveys; some surveys deal with groups of high and others with low infection incidence. Evidence shows that the tuberculin test is an efficient preliminary case-finding measure in groups under relatively heavy exposure, as nurses in a hospital or sanatorium. For example, among 400 nurses, 22 "cases" of tuberculosis have occurred, all of which developed or already exhibited tuberculin sensitivity some months in advance of the onset of a recognized lesion, and no case has developed in the absence of tuberculin sensitivity. In groups under exceptional exposure the tuberculin test is an effective warning sign indicating the need of close and frequent observation.

Studies conducted by the United States Public Health Service and the Department of Health of Tennessee have shown that the tuberculin test is far from being the sharp indicator, once popularly supposed, of previous simple tuberculous infection. These studies disclosed a large amount of what appears to be healed primary tuberculosis in people not reacting to tuberculin. A supplementary survey conducted at Hagerstown, Maryland, however, indicated that for case-finding purposes the tuber-

culin test is highly effective. In the 1000 subjects examined by both tuberculin test and x-ray, 13 cases of tuberculosis were discovered, all but one of which reacted to tuberculin, and this case was of scarred apical disease of slight extent and apparently long arrested. The author believes that an accuracy of about 90 to 95 per cent may be expected of the tuberculin test as a means of selecting subjects for examination by x-ray, but admits that a loss of five to ten per cent is serious, but perhaps inevitable.

Limitations of the Tuberculin Test

The attempt to divide all mankind into two groups, infected and not infected, is futile and probably responsible for most of the present confusion. Two other groups must be recognized: (1) those infected, not yet positive, but to be positive shortly thereafter, and (2) those infected and previously positive, but now negative. (A possible fifth group would include those who are infected and never develop a positive reaction.)

Allergy does not develop simultaneously with infection. There may be an interval of from two to three weeks between infection and a positive tuberculin reaction. In any large survey there may be a few cases recently infected and not tuberculin-positive. In some of these, x-ray lesions may develop.

The second group (previously positive, now negative) is more important; probably the greatest single cause for our present confusion. We have tended to overlook the fact that with the arrest and healing of tuberculous lesions allergy wanes and finally may disappear.

In a period, however, when the mortality rate is dropping steadily, and the morbidity rate is following in some proportionate relationship, and when in addition an improved control of tuberculosis is bringing about a steadily increasing isolation of patients with open lesions, it is only to be expected that reinfection, the rule in the past, will become progressively less frequent. The infections that formerly constantly restored a waning allergy will be far less frequent in the future and we may look forward to the time when loss of allergy will be as common as its maintenance.

A study of 2,490 positive reactors, all examined at the Henry Phipps Institute, showed that 276, or approximately 11 per cent became negative, either transiently or for the balance of the period of observation. It was disclosed also that the stronger the original reaction the less frequently it reverted to negative, and vice versa. Further, the correlation with exposure was equally striking. In 58 per cent of the families in which no tuberculosis was present, the tuberculin reaction became negative in some member of the family, while in families where there was continuously a member with sputum-positive tuberculosis, allergy disappeared in some member of the household in only eight per cent of the families.

The fact that allergy tends to disappear where there is no exposure, and has more and more tendency to remain as exposure is presumably more frequent, suggests strongly that reinfection is responsible for the maintenance of the positive reaction. The epidemiological significance of this fact is obvious.

In the 276 cases in which the reaction became negative, no abnormality was detected in the film in 94 per cent and there were no cases of active reinfection type tuberculosis in the entire group. In 10 cases with what were read as calcified lesions, the reaction became negative.

Two cases are recorded in which tuberculin-negative children with calcified lesions became tuberculin-positive coincidently with the development of fresh, active tuberculosis.

Unusual Skin Infections

The finding and identification of the causative organism of two rather unusual skin infections, both within a comparatively short time, should serve to increase the awareness among the medical profession of the possibility of such diseases, James L. Wade, M.D., Parkersburg, W. Va., and A. R. K. Matthews, M.D., Rockford, Ill., declare in *The Journal of the American Medical Association* for February 3.

The two men state that they have been unable to find any other reported examples of infection with the type of fungus they identified. They previously had reported the case of a woman whose breast was infected with sporothrix an organism resembling the yeast fungi.

The fungus causing the infection is known as mucor, an organism that forms grayish-white growths, usually called "whiskers," on cold storage meat. Treatment with iodides (compounds of iodine) by mouth and injection into the veins caused the lesions to disappear.

President's Page

Feeling that our members should be more familiar with the inside working of our Association, I plan during my administration to discuss in this page from time to time, the machinery which keeps our organization in constant motion. As our financial setup provides the oil for this machinery, I feel that a discussion of the Association's receipts and disbursements is probably in order at this time.

The Association has approximately 1,200 active members in good standing. Each member pays $10.00 per year which gives the Association an annual income of approximately $12,000.

Each county society fixes its own dues over and above the dues for the State Association. County dues range from $1.00 per year in some of the smaller counties to $10.00 in several of the larger county groups.

The $10.00 paid by each member to the State Association is distributed as follows:

$ 1.00	— Medical Defense Fund
1.00	— Indigent Fund
2.00	— West Virginia Medical Journal
6.00	— General Operating Expense
$10.00	— Total.

The defense fund is used only in legal cases of importance to the entire profession and is not used for the individual protection of individual members. The advantage of this fund has been demonstrated on many occasions. It was through this fund that we joined with the Cabell County Medical Society and obtained the Sloan vs. Mitchell decision, the first of its kind, which brought a ruling from our State Supreme Court that a doctor's license was a property right or franchise. Since obtaining this Court ruling we have chased most of the notorious quacks from West Virginia. The defense fund was also used in the Morgantown Privilege Tax case in which the City of Morgantown attempted to levy a privilege tax on physicians. Had this gone unchallenged, most of our other West Virginia municipalities, hungry for revenue, would have attempted similar ordinances. We have used this fund to enter about twenty cases in the past ten years, all of them of considerable importance to the profession as a whole.

The indigent fund is used to help out indigent physicians. At the present time we are using the fund in only one case. That is the case of a very fine old doctor who had a paralytic stroke several years ago. His wife secured part time employment and we supplement her income with a grant of $25.00 each month, which enables her to take care of her husband fairly well.

The two dollars for the West Virginia Medical Journal is self-explanatory.

The six dollars from the dues of each member for General Operating Expense brings in approximately $7,200 per year. This is not sufficient to carry on the various functions of the Association. However, the Association has additional income. We make an annual profit on the Journal of about $4,000 per year and have income from investments of approximately $800.00 per year, giving us a total of about $12,000 annually, which takes care of all of our needs fairly well. The breakdown in disbursements of this $12,000 is approximately as follows:

$ 7,500	— Office Salaries.
1,000	— Convention Expenses.
1,000	— Expenses for Council meetings, Committee meetings, Secretaries' Conferences, etc.
1,500	— Investments and Savings.
1,000	— Miscellaneous, office rent, postage, telephone, stationery, legal retainer, janitor service, legislative lobbying, etc.
$12,000	— Total.

Of course none of these figures is absolutely correct but they are close enough, I believe, to give a fairly accurate picture of our Association's financial setup. At this time when we are nearing the deadline for the payment of Association dues, it was felt to be an opportune time to show where the Association derives its revenue and how that revenue was spent. Considering the protection and the many advantages offered by the Association to the profession in this State, I think we can all rest assured that we are on a sound actuarial basis and that we are all getting value received, in good measure, for our annual investment.

Frank V. Langfitt

President.

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THE WHITE SULPHUR PROGRAM

Work on the scientific program for the joint annual session with the Medical Society of Virginia at White Sulphur Springs next July 29-31, 1940, is almost completed and a preliminary announcement of guest speakers has been authorized. We present the following essayists who have accepted program assignments:

Dr. Irvin Abell, Louisville, on surgery.

Dr. Ross Golden, New York City, on radiology.

Dr. Walter Alvarez, Mayo Clinic, Rochester, on internal medicine.

Dr. Harvey B. Stone, Baltimore, on surgery.

Dr. Ralph M. Tyson, Philadelphia, on pediatrics.

Dr. George E. Bennett, Baltimore, on orthopedic surgery.

Dr. Karl M. Bowman, New York City, on neuropsychiatry.

Dr. Frederick C. Irving, Boston, on obstetrics and gynecology.

Dr. A. I. Folsom, Dallas, Texas, on urology.

Dr. Wesley C. Bowers, New York City, on eye, ear, nose and throat.

Plans for a golf match between the State Association and the Medical Society of Virginia are being worked out by Dr. Sobisca S. Hall, Clarksburg, chairman of the convention golf committee. The match will be played on Sunday, July 28, on the day preceding the opening of the general convention sessions.

Further convention plans concerning section meetings, special society sessions, Auxiliary meetings, entertainment and allied interests will be reported in subsequent issues of the JOURNAL.

THE NEW HOSPITAL PROGRAM

While all of us may not be in complete accord with all of the thoughts and ideas expressed in the following editorial from the January 31 issue of the *Wheeling Intelligencer*, we are all keenly interested in President Roosevelt's statement "that the hospital program represents only a start on a broad federal program to aid and improve the nation's health." The possibilities of future health legislation are ably discussed in the *Intelligencer* editorial, which we reprint in full. Says the *Intelligencer*:

"There is much appeal in President Roosevelt's request that Congress appropriate a maximum of $10,000,000 for the construction of modern hospitals in communities not now provided with hospital facilities. There are, however, a number of questions to be answered before blanket public approval can be given.

"In his message submitting the proposal, Mr. Roosevelt, the United Press reports, 'made it clear that the hospital program represents only a start on a broad federal program to aid and improve the nation's health?'

"What sort of program does the president have in mind?

"Upon the answer to that question, we think, much depends.

"It will be remembered that until very recently, there was projected by the administration a general health plan embodied in the so-called Wagner national health bill. This measure proposed to introduce what was rather indefinitely described as 'compulsory sickness insurance.' Translated into familiar language, this meant some form of state medicine, an enterprise much in the public mind of late, and the subject of spirited controversy.

"Mr. Roosevelt's decision to drop the Wagner bill in favor of the hospital plan now projected came as something of a surprise. The question, therefore, of whether this represented a change in sentiment on the part of the president, or merely

tactical maneuvering, becomes important in considering the hospital proposal.

"A poll recently conducted by the *Christian Science Monitor* may throw some light on the subject. This poll disclosed that fewer than a dozen senators were willing to announce approval of the Wagner measure. That indicated that the bill had little possibility of passage, a fact of which, it may be taken for granted, the White House was fully advised.

"In other words, it is quite possible that Mr. Roosevelt dropped the Wagner bill because he was convinced it could not win through, and that the hospital construction plan was advanced as an undeclared first step toward the objectives of the Wagner bill.

"Such considerations might throw an entirely different light on the hospital plan. And they most assuredly suggest the propriety of having several questions answered:

"Just what is this 'broad federal program to aid and improve the nation's health' which the United Press says the hospital construction would inaugurate?

"Who will control the hospitals to be built with the funds Mr. Roosevelt asks?

"What will be their relationship to the private practice of medicine in the communities involved?

"The answers to these and other questions are important. If it is proposed merely to provide hospital facilities in communities not now served, that is one thing. If it is intended to make a disguised start toward state medicine, that is quite another."

MALPRACTICE INSURANCE

Once every so often our attention is called to the fact that a considerable number of Association members believe they receive adequate liability insurance protection through the payment of their county and state dues. As this is not the case, we again urge all doctors engaged in active practice to carry commercial liability protection.

It is true that the Association does have a defense fund and that one dollar from the dues of each member goes into that fund. However, the defense fund is used only in cases that involve some legal point or proceeding that might affect the entire profession. It is never used to furnish individual malpractice insurance protection to an individual member. This is explained in some detail in Dr. Langfitt's President's Page in this issue of the JOURNAL.

The commercial rates for liability insurance protection for a doctor in ordinary private practice vary from approximately $20 to $25 per year. If that amount is necessary to furnish adequate protection, it stands to reason that the Association cannot furnish liability protection for one dollar per annum. The defense fund is adequate to provide excellent group protection, but nothing more.

Frequent proposals have been made to the Council to provide complete liability insurance coverage to members through a substantial increase in annual dues. In the past the Council has felt that with our fight to keep lay hands out of the practice of medicine, our position would not be entirely consistent if we, as doctors, branched out in the insurance field.

Licensure of Aliens

Of timely interest is a recent decision by the courts of Texas, upholding that portion of the Medical Practice Act prescribing citizenship as a condition precedent to medical licensure.

A test case was brought by an El Paso-Juarez alien against the Texas State Board of Medical Examiners, petitioning the courts to compel the board to admit this individual to examination. The pleadings attacked the validity of the portion of the Medical Practice Act requiring examinees to be citizens. The plaintiff's contention of invalidity was denied, and the act upheld.

A significant portion of the defendant's brief is quoted: "There is no good reason why restraints should not be placed upon the practice of medicine as well as the law. The public are more directly interested in this than in the practice of law; and persons who engage in this profession require a special education qualifying them to practice. A great majority of the public know little of the anatomy of the human system, or of the nature of the ills that human flesh is heir to; and there is no profession, no occupation, or calling, where people may more easily or readily be imposed upon by charlatans."—*Southwestern Medicine.*

General News

Coming Meetings

The twenty-fourth annual session of the American College of Physicians will be held at Cleveland, Ohio, on April 1-5, 1940. All general meetings, exhibits, etc., will be held in the Public Auditorium. The hotel headquarters will be the Statler Hotel.

* * * *

The annual meeting of Region II of the American Academy of Pediatrics will be held at the Edgewater Gulf Hotel at Edgewater Park, Mississippi, on March 15 and 16, 1940. Region II of the Academy comprises the southern states from Virginia to Texas. All interested physicians are invited to attend.

* * * *

The eleventh annual assembly of the Southeastern Surgical Congress will be held at Birmingham, Alabama, on March 11-13, 1940, with headquarters at the Tutwiler Hotel. Secretary of the organization is Dr. B. T. Beasley, 701 Hurt Building, Atlanta, Georgia.

* * * *

The American Board of Internal Medicine will conduct oral examinations just previous to the meetings of the American College of Physicians in Cleveland and just in advance of the meeting of the American Medical Association in New York City. Application forms may be obtained from Dr. William S. Middleton, 1301 University, Avenue, Madison, Wisconsin.

Memorial to Dr. Ray

(Editor's Note: Because Dr. Ray was a former Association president and a former editor of this Journal, and because of his hundreds of friends in the profession throughout the state, we publish herewith the tribute paid to him by his co-workers on the staff of the Kanawha Valley Hospital, where Dr. Ray died on January 21.)

We are gathered this afternoon to pay tribute to the memory of a man whom we shall see no more. Another river of life has run out into the unchartered sea. I realize full well that we cannot drown sorrow nor gild grief with words, but we can temper our emotions by the memory of the good deeds of those whom we loved. Charles Andrew Ray is dead, but only the mortal part has passed to the Great Democracy of Death. The immortal, the fine deeds, the kindly acts, the gracious and loving sympathy, will live on forever.

We can never estimate the true worth of a man until he is gone. Then we contemplate calmly, with reference only to what has passed and not prejudiced by what he might possibly do in the future. The result is a much more sure and higher appraisal of the man.

He was a man of strong convictions. He fought hard for things in which he believed, but if shown a better way, he submitted and supported it. His interest was never lukewarm, it was always intense. What he knew he knew well. His interests were wide. He loved his friends. He loved the mountains and the forest and the stream and reveled in nature's colorings.

His greatest interest, however, was in his chosen profession, in which he stood at the very top. He was a leader, not a follower. He sought the intellectual light in his work. His face was always toward the east. He was a good diagnostician, a skilled technician. He had a gentle, human touch.

Hearts break, men die, flowers bloom, leaves fall; but the world moves on. Doctor Ray would not have us stop a minute because of his passing. We must carry on the lighted torch as we shall.

Honored, respected, loved, he could have had no real regrets for his past course. We may believe that he served with all his might and with the full force of a fine mind. His must have been a life of satisfaction with himself.

Vigorous, active, aggressive, in full flower of health almost throughout his seventy-five years of life, he died apparently with no pain, ill but a few hours, at peace with himself and the world. What greater reward can any man have than to live and die as did he?

Farewell, dear colleague, we are richer in wisdom for your having worked with us.

Museum of Health

The medical and public health exhibits at the New York World's Fair, which were attended by 7,500,000 visitors in 1939, will be reopened for the 1940 season beginning May 11, it was announced recently by Dr. Louis I. Dublin, acting chairman of the American Museum of Health.

New exhibits, the nature of which will be made public before the opening date, will be added to the Carrel-Lindbergh "heart", the transparent man and other dramatizations of medical science which vied last year with such industrial features as the General Motors Futurama and the American Tele-

phone and Telegraph Company's "Voder" as drawing cards for Fair visitors.

National Physicians' Committee

On November 18, in Chicago, a formal meeting of an executive board officially launched a new organization, the National Physicians' Committee for the Extension of Medical Service," a report in *The Journal of the American Medical Association* for December 2 says. "At this meeting the following officers were elected: Dr. Edward H. Cary, Dallas, Texas, chairman; Dr. Austin A. Hayden, Chicago, secretary, and Dr. N. S. Davis, III, Chicago, treasurer. These officers were given authority to act as a management committee for the new organization.

"The organization is an independent one, not affiliated in any way whatever with the committee sponsored by Mr. Frank Gannett under the management of Dr. Edward A. Rumeley or with the so-called Committee of Physicians or with the American Medical Association. The functions will not, it is stated, overlap or infringe on those of existing county, state or national medical organizations. For its finances, this organization depends wholly on voluntary contributions from physicians, dentists, nurses, hospitals, pharmacists and lay groups interested in the maintenance of the private practice of medicine. In literature released by the Management Committee, the reasons for forming this new institution are stated as follows:

'Medicine is confronted with two new sets of conditions. On the one hand, widespread unemployment, low farm income, and the continuation of conditions of general depression have made it difficult for an ever increasing number of people to pay for the best medical service and proper hospitalization out of earnings.

'On the other hand, there is the trend—worldwide in scope—toward governmental paternalism and the false, suicidal doctrine that the "state" can provide a service and a security that the people cannot otherwise obtain. As related to medicine, the implementing of this concept would effect revolutionary changes in both the practice of medicine and the underlying philosophy which has given it the dynamic quality that resulted in worldwide leadership.

'If the ethical and scientific standards are to be maintained, the independence of American medicine preserved and the public interest best served, American physicians must:

'1. Make possible the providing of medical service to the indigent and those in the low income groups, and insure the most widespread distribution of the most effective methods and equipment in medicine and surgery.

'2. Assume the responsibility of countering destructive propaganda by familiarizing the public with the facts in connection with the methods and the achievements of American medicine.'

"The objectives are embodied in a motion, unanimously adopted by the directors:

'*Resolved*, That the National Physicians' Committee for the Extension of Medical Service is a non-profit, non-political organization for maintaining ethical and scientific standards and extending medical service to all the people . . . and for . . . cooperating with lay and medical institutions and groups, interested in the preservation of national health, to make more generally known the achievements and to safeguard the independence of American medicine.'

"A broadgage nationwide educational program has been planned and the preliminary steps have been taken to put it in operation. An effort will be made to familiarize the public with the aims, the methods and the effectiveness of American medicine. It is believed that this will result in generally improving health conditions and will tend to offset propaganda that is altering the point of view of the individual and adversely affecting the status of the physician."

National Census Started

The Sixteenth Decennial Census of the Bureau of the Census of the U. S. Department of Commerce will be taken beginning April 1. The bureau requests the cooperation of physicians in furnishing information requested, promptly and accurately. By act of the Congress, each individual is obligated to answer the various questions propounded. As pointed out in an article in the organization section of *The Journal of the A. M. A.*, pages 2155-6, December 9, 1939, issue, data compiled by the bureau as a result of the census should be of inestimable value to the public and the medical profession. Enumerators and other employees of the bureau are under oath never to reveal any of the information which goes through their hands either to individuals or to any society, association or government department. Reports cannot be used for the purposes of taxation, regulation or investigation.

Care should be taken to determine whether the census enumerator is authorized. There have been reports already of fake census enumerators. No information should be disclosed until the census-taker presents credentials issued by the Bureau of the Census.

Your Income Tax

There is no change in the Revenue Act of 1939, relating to the Federal Income Tax laws, of special interest to physicians, as such. However, the Public Salary Tax Act of 1939 subjects to the Federal Income Tax laws the income derived from personal service rendered by a physician as an officer or employee of a state or political subdivision. Heretofore such income has been considered nontaxable under Federal Income Tax laws. In addition, the Federal Government has consented to the taxation by states of compensation received after December 31, 1938, for professional service as an officer or employee of the United States.

The following points and suggestions relating to the physician's income tax may be helpful to the doctor who prepares his own returns:

A physician's gross income is the total amount of money received by him during the year for professional services, regardless of the time when the services were rendered for which the money was paid, plus such money as he has received as profits from investments and speculation and as compensation and profits from other sources.

Certain professional expenses and the expenses of carrying on any enterprise in which the physician may be engaged for gain may be subtracted as "deductions" from the gross income, to determine the net income on which the tax is to be paid.

In computing the normal tax, but not the surtax, there may be subtracted from net income from all sources an amount equal to 10 per cent of the earned net income, except that the amount so subtracted shall in no case exceed 10 per cent of the net income from all sources. Earned income means professional fees, salaries and wages received as compensation for personal services, as distinguished from receipts from other sources.

The first $3,000 of a physician's net income from all sources may be regarded under the law as earned net income, whether it was or was not in fact earned within the meaning set forth in the preceding paragraph. Net income in excess of $3,000 may not be claimed as earned unless it in fact comes within that category. No physician may claim as earned net income any income in excess of $14,000.

A physician is entitled to deduct all current expenses necessary in carrying on his practice. The taxpayer should make no claim for the deduction of expenses unless he is prepared to prove the expenditure by competent evidence. So far as practicable, accurate itemized records should be kept of expenses and substantiating evidence should be carefully preserved. The following statement shows what such deductible expenses are and how they are to be computed:

Office rent is deductible. If a physician rents an office for professional purposes alone, the entire rent may be deducted. If he rents a building or apartment for use as a residence as well as for office purposes, he may deduct a part of the rental fairly proportionate to the amount of space used for professional purposes. If the physician occasionally sees a patient in his dwelling house or apartment, he may not, however, deduct any part of the rent of such house or apartment as professional expense; to entitle him to such a deduction he must have an office there, with regular office hours. If a physician owns the building in which his office is located, he cannot charge himself with "rent" and deduct the amount so charged.

Expenditures for office maintenance, as for heating, lighting, telephone service and the services of attendants, are deductible.

Payments for supplies for professional use are deductible. Supplies may be fairly described as articles consumed in the using; for instance, dressings, clinical thermometers, drugs and chemicals. Professional journals may be classified as supplies and the subscription price deducted. Amounts currently expended for books, furniture, and professional instruments and equipment, "the useful life of which is short," generally less than one year, may be deducted; but if such articles have a more or less permanent value, their purchase price is a capital expenditure and is not deductible.

Equipment comprises property of a more or less permanent nature. It may ultimately wear out, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed in the using."

The cost of equipment, such as has been described, for professional use, cannot be deducted as expense in the year acquired. Examples of this

class of property are automobiles, office furniture, medical, surgical and laboratory equipment of a more or less permanent nature, and instruments and appliances constituting a part of the physician's professional outfit to be used over a considerable period of time, generally over one year. Books of more or less permanent nature are regarded as equipment and the purchase price is therefore not deductible.

Although the cost of such equipment is not deductible in the year acquired, nevertheless it may be recovered through depreciation reductions taken year by year over its useful life, as described later.

No hard and fast rule can be laid down as to what part of the cost of equipment is deductible each year as depreciation. The amount depends to some extent on the nature of the property and on the extent and character of its use. The length of its useful life should be the primary consideration. The most that can be done is to suggest certain average or normal rates of depreciation for each of several classes of articles and to leave to the taxpayer the modification of the suggested rates as the circumstances of his particular case may dictate. As fair, normal or average rates of depreciation, the following have been suggested: automobiles, 25 per cent a year; ordinary medical libraries, x-ray equipment, physical therapy equipment, electrical sterilizers, surgical instruments and diagnostic apparatus, 10 per cent a year; office furniture, five per cent a year.

The principle governing the determination of all rates of depreciation is that the total amount claimed by the taxpayer as depreciation during the life of the article, plus the salvage value of the article at the end of its useful life, shall not be greater than its purchase price or, if purchased before March, 1913, either its fair market value as of that date or its original cost, whichever may be greater. The physician must in good faith use his best judgment and claim only such allowance for depreciation as the facts justify. The estimate of useful life, on which the rate of depreciation is based, should be carefully considered in his individual case.

Dues paid to societies of a strictly professional character are deductible. Dues paid to social organizations, even though their membership is limited to physicians, are personal expenses and not deductible.

The Commissioner of Internal Revenue holds that the expense of postgraduate study is not deductible.

Traveling expenses, including amounts paid for transportation, meals and lodging, necessarily incurred in professional visits to patients and in attending medical meetings for a professional purpose, are deductible.

Payment for an automobile is a payment for permanent equipment and is not deductible. The cost of operation and repair, and loss through depreciation, are deductible. The cost of operation and repair includes the cost of gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeurs' wages and the like.

Deductible loss through depreciation of an automobile is the actual diminution in value resulting from obsolescence and use and from accidental injury against which the physician is not insured. If depreciation is computed on the basis of the average loss during a series of years, the series must extend over the entire estimated life of the car, not merely over the period in which the car is in the possession of the present taxpayer.

If an automobile is used for professional and also for personal purposes—as when used by the physician partly for recreation, or so used by his family—only so much of the expense as arises out of the use for professional purposes may be deducted. A physician doing an exclusive office practice and using his car merely to go to and from his office cannot deduct depreciation or operating expense; he is regarded as using his car for his personal convenience and not as a means of gaining a livelihood.

What has been said in respect to automobiles applies with equal force to horses and vehicles and the equipment incident to their use.

The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and of laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense and is deductible, pro-

vided evidence of such loss or damage can be produced. Such loss or damage is deductible, however, only to the extent to which it has not been made good by repair and the cost of repair claimed as a deduction.

Premiums paid for insurance against professional losses are deductible. This includes insurance against damages for alleged malpractice, against liability for injuries by a physician's automobile while in use for professional purposes, and against loss from theft of professional equipment and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be included any automobile belonging to the physician and used for strictly professional purposes.

Expense incurred in the defense of a suit for malpractice is deductible as a business expense.

New West Virginia Directory

Dr. A. B. Bowyer of Buckhannon, is the editor and publisher of a new 1940 West Virginia Medical Directory which is being released on March 1. The directory covers the medical profession of West Virginia and the listing of doctors is arranged by counties, cities, and in alphabetical order.

An unusual feature of Dr. Bowyer's directory is the listing of special interests, hobbies, clubs, and political affiliation of the doctors who furnished that information to him. In addition, the directory lists the date and place of birth, preliminary schools, degrees, medical college and year of graduation, year of interneship, date of West Virginia license, postgraduate training and former locations.

It is apparent that Dr. Bowyer put in a great deal of hard work in gathering the vast amount of information contained in his directory. While the directory doesn't take the place of the official directory published bi-annually by the A. M. A., it is a valuable "Who's Who" on practically every doctor in the state. Dr. Bowyer has advised that the price of his directory is $3.00 per copy and copies may be secured by writing Dr. Bowyer at his Buckhannon address.

Industrial Physicians

A joint meeting of the West Virginia Society of Industrial Physicians and Surgeons with the Kanawha Medical Society has been arranged for April 9 with Dr. Sumner L. Koch of Chicago, as the guest speaker. Dr. Koch, associate editor of *Surgery, Gynecology and Obstetrics*, will speak on "Treatment of Recent Injuries" and all Association members in neighboring societies are cordially invited to attend.

Special invitations to the joint meeting are being issued through the office of Workmen's Compensation Commissioner, A. G. Mathews, to all of the compensation medical examiners throughout the state. The compensation examiners will be special guests of the industrial society and will remain over for a special address and round-table discussion with Dr. Koch on the morning of April 10.

Dr. Koch will address the industrial society on the afternoon of April 9, prior to appearing before the joint group that evening. All of the sessions will be held at the Daniel Boone Hotel, Charleston.

Spread of Malaria

Because chronic malaria is a disease frequently lacking in the usual symptoms of infection, such as chills and fever, and thus is often unrecognized, present methods used to prevent the spread of malaria are inadequate, *The Journal of the American Medical Association* for January 6 points out in a summarization of the conclusions of two investigators of the disease.

The solution of the problem, as applied to the community, lies in thorough treatment of the individual patient, these investigators believe, and efforts should therefore be directed at this group of carriers of the disease which are abundantly present in the population.

"G. H. Fondé, M.D., and E. C. Fondé, M.D., Mobile, Ala., in a recent article classify chronic malaria into two varieties, reactive and non-reactive. The reactive form embraces a latent, an atypical (irregular) and a typical late phase," *The Journal* states. "In this form the defensive forces are more or less vigorously operative and the progress of the disease is arrested because of prompt destruction of parasites by a highly developed immune mechanism. This condition frequently remains unrecognized, and the characteristic lower level of vigor is passed off as some individual characteristic or idiosyncrasy.

"In the second form—non-reactive chronic malaria—the patient is ill, disabled and confined to bed, but demonstration of the parasites in the blood is rarely possible. The temperature is normal or subnormal for the greater part of the time and often the dry copper-colored skin is the only clinically recognizable diagnostic feature."

TWENTY-FIVE YEARS AGO

From The West Virginia Medical Journal, March, 1915.

Original articles appearing in the March, 1915, JOURNAL were by Dr. C. B. Wylie of Morgantown, Dr. W. C. Slusher, Bluefield; Dr. R. H. Haynes and Dr. S. L. Cherry, of Clarksburg.

Dr. J. E. Cannaday of Charleston reported on his attendance at the Southern Surgical and Gynecological Association's Twenty-seventh Annual Session at Asheville, N. C.: "This society was organized more than a quarter of a century ago by a number of the leading surgeons of the southern states . . . but at this time about one-fifth of the members reside in the north and west . . . Dr. Henry O. Marcy, the veteran surgeon of Boston, related a number of his experiences as surgeon in the Union Army during the Civil War . . . Dr. J. C. Bloodgood of Baltimore gave an extended talk on what the civil surgeon can do for military surgery in time of peace . . . Tincture of iodine has come to stay. We have gotten over our former religious veneration for bichloride of mercury."

"We print the Public Health Bill as it passed the legislature and it becomes active July 1st, 1915 . . . All health officers of the state are requested to preserve this copy. Study it carefully and prepare to lend all possible aid to the new Council on Health. The State Board of Health is dead. Long live the Public Health Council."

"The Harrison County Society held their regular meeting on February 25. Members present were: Drs. Willis, Arnett, Hood, Shuttleworth, Louchery, Gaston, Ogden, Cherry, Mason, Slater, Kessler, Wilson, C. O. Post, Jarvis, and H. H. Haynes."

"The Eastern Panhandle Society has announced a program for its meeting in Harpers Ferry on March 3d, which contains an announcement of papers by Professor Lewellyn F. Barker of Johns Hopkins, Dr. T. D. Williams of Martinsburg and Dr. C. R. Foutche of Berkeley Springs."

New York A.M.A. Session

"Plans are well under way for one of the greatest annual sessions of the American Medical Association ever held in its history," the Association's *Journal* for Feb. 3 declares. "This session is scheduled to take place in New York City, June 10-14 inclusive.

County Society News

Boone County

A most interesting and successful meeting of the Boone County Medical Society was held at the Boone County Health Department office, Madison, on January 25, 1940. Motion pictures, three reels—Dr. De Lee, on "Eclampsia" was shown to a group of nurses and then to the members of the medical society. Discussion of eclampsia followed, with Dr. Pauley desiring to know just how Dr. De Lee would handle a case of eclampsia in a home on the head of Hewett.

Officers elected were: Dr. Ray I. Frame, Sharples, president; Dr. A. E. Glover, Madison, vice president; Dr. R. L. Hunter, secretary and treasurer. Dr. Hunter made a talk on the proposed transfer of the sanatorium to the Salvation Army, after which the society voted unanimously to go on record as favoring this move, with all the doctors pledging support in donations, free services, etc.

It is the desire of the new president to take the society to the membership, with each member entertaining one meeting each year, being responsible for program and presentation of cases. This procedure is unique and is believed to be a progressive step in organized medicine in rural areas and one which will appeal to membership.

The new president, like all ex-presidents, is a high type man, an excellent physician and one who will sacrifice time and energy to help the society's membership.

Refreshments were served by the health department and paid for out of society funds.

R. L. HUNTER, *Secretary*.

Cabell County

The regular monthly meeting of the Cabell County Medical Society was held at the Governor Cabell Hotel on the evening of February 6 with a good attendance. The guest speaker was Dr. Roy B. Cook, Ph.D., who talked on "Interpretation of the New Food, Drug and Cosmetic Act as it Affects the Physician and Druggist." A short talk on "The Community Chest" was made by Mr. H. F. Haylor of the American City Bureau.

JAY L. HUTCHINSON, *Secretary*.

Fayette County

Dr. Emery R. Hayhurst, Columbus, Ohio, was the guest speaker at the February 15 meeting of the Fayette County Medical Society, held at Conley Hall, Montgomery. His subject was "Pulmonary Diseases in Industry." Discussion was led by Dr. L. R. Harless, Gauley Bridge; Dr. George Fordham, Powellton, and Dr. W. B. Davis, Elkridge. This was a very able and instructive presentation with special emphasis on silicosis. Dr. Hayhurst's talk was well received by an audience of over fifty physicians, with many visitors from adjoining societies.

The next meeting of the society will be held at Montgomery on the evening of March 12 with Dr. J. M. Meredith, Department of Neurosurgery, University of Virginia, Charlottesville, as the guest speaker. Dr. Meredith will speak on "Diagnosis and Treatment of Acute Head Injuries." Discussion will be led by Dr. N. L. Cardey, Winona; Dr. Nathan Reeves, Oak Hill, and Dr. T. K. Laird, Montgomery.

GILBERT DANIEL, *Secretary*.

Kanawha County

Dr. Arthur J. Skeel, Emeritus Chief of Obstetrics at St. Luke's Hospital, Cleveland, was the guest speaker at the February 13 meeting of the Kanawha Medical Society which was held at the Daniel Boone Hotel, Charleston. Dr. Skeel, who has witnessed the entire development of modern obstetrics, gave a most interesting discussion of obstetrics from the viewpoint of the general practitioner.

W. A. THORNHILL, *Secretary*.

Lewis County

The Lewis County Medical Society met at The Weston General Hospital, Tuesday, February 13, at 8:00 p. m., and was addressed by Dr. George Booth, director of Renzie House Foundation of Pittsburgh, Pennsylvania. His subject was "Diabetes Mellitus and Its Treatment." The talk was well prepared, well presented, and very instructive.

There were eighteen members present which is a good number for our small society. Two visiting doctors were present. After the discussion of the paper there was a social session at which time Dr. A. F. Lawson, of the General Hospital, served tasty sandwiches and coffee.

We are very much pleased with the improvement in attendance that has been shown at the last two meetings of the society and it looks as if, by holding meetings at the different hospitals, there is definite improvement in attendance and interest.

E. A. TRINKLE, *Secretary*.

Marshall County

The regular meeting of the Marshall County Medical Society was held in the Elk's Club rooms at Moundsville at four o'clock on the afternoon of February 13. The program was a report on the State Conference of County Society Presidents and Secretaries by Dr. H. S. Parker of McMechen, president of the Marshall society. Dr. Parker's report brought forth an interesting discussion.

J. A. STRIEBICH, *Secretary*.

Mercer County

The Mercer County Medical Society held its annual banquet and election of officers on December 21 at the West Virginia Hotel, Bluefield. There was an excellent attendance and a pleasant evening was enjoyed by all.

Dr. O. G. King, Bluefield, was elected president; Dr. F. N. Richmond, Bluefield, vice president; Dr. Frank J. Holroyd, Princeton, secretary; Dr. Harry G. Steele, Bluefield, treasurer; Dr. Lawrence Pace, Princeton, censor, and Dr. R. O. Rogers, Bluefield, state delegate for two years.

The January 25 meeting of the society was held in the Municipal Building, Bluefield. Dr. E. L. Gage read a paper on "The Surgical Problem of Gall-Bladder Disease," in which he mentioned the potential dangers of the infected and calculous gall-bladder to adjacent structures, illustrating with brief case reports. He advocated the surgical treatment of infected calculous gall-bladders rather than the conservative and medical treatments. The discussion was opened by Dr. Wade St. Clair who advocated letting the acute gall-bladder subside before operation. Dr. T. E. Vass was of the opinion that there was no reason for postponing surgery if the acute gall-bladder was seen within 24 to 36 hours.

Dr. C. J. Reynolds read a paper on the "Probable Effects of Testosterone on Prostate Therapy." He pointed out the close interrelationship between the functions of the testicles, pituitary and the prostate glands and stated that good clinical results are obtained in 65 per cent of the cases of benign hypertrophy cases by the use of testosterone. His paper was discussed by Dr. Hewitt.

FRANK J. HOLROYD, *Secretary*.

Monongalia County

The regular monthly meeting of the Monongalia County Medical Society was held at the Hotel Morgan, Morgantown, on the evening of February 6, 1940. Following a six o'clock dinner, the scientific program was presented by Dr. David Salkin of Hopemont Sanitarium. He gave a highly interesting paper on "Collapse Therapy and Rest in Pulmonary Tuberculosis."

CARL JOHNSON, *Secretary.*

Ohio County

Dr. R. S. Dinsmore of the Cleveland Clinic, Cleveland, Ohio, was the guest speaker at the February 9 meeting of the Ohio County Medical Society at Wheeling. He gave an interesting and practical presentation on "Tumors of the Neck." Discussion was led by Dr. J. R. McClung and Dr. J. D. Bird.

Dr. W. Wayne Babcock, Professor of Surgery, Temple University, Philadelphia, addressed the February 23 meeting of the society. His subject was "Abdominal Drainage."

Dr. T. Grier Miller, Professor of Clinical Medicine, University of Pennsylvania, and Dr. Stanley P. Reimann, Associate Professor of Clinical Pathology, Graduate School of Medicine, University of Pennsylvania, will address the society in March. Dr. Miller will talk on March 8 on "Medical Aspects of Gastric and Duodenal Ulcer." Dr. Reimann will speak on March 22 on "Secondary Breast Tumors."

R. W. LUKENS, *Secretary.*

Parkersburg Academy

Mr. Charles B. Selby was the speaker at the February 7 meeting of the Academy of Medicine of Parkersburg which was held at St. Joseph's Hospital. His subject was "Proprietary Versus Pharmacopeal Products."

Dr. L. H. Newburgh, Professor of Clinical Investigation, University of Michigan, Ann Arbor, will be the guest speaker at the March 6 meeting of the society at the City Hospital. His subject will be "Diabetes."

A. C. WOOFTER, *Secretary.*

Raleigh County

The regular monthly meeting of the Raleigh County Medical Society was held in Beckley on February 15. Due to the heavy snow the scheduled speaker was unable to attend. The scientific program consisted of an interesting moving picture in technicolor, entitled "Gonadogen." Dr. Clark Kessel of Beckley read a paper on "Sulfapyridine."

Dr. K. H. Trippett has recently moved from Scarbro to Mabscott and has transferred his membership from the Fayette to the Raleigh County Medical Society.

E. N. DUPUY, *Secretary.*

Wetzel County

The first meeting of the Wetzel County Medical Society for 1940 was held at New Martinsville on January 17 at which time the new officers were elected and delegates selected for the state meeting. Dr. E. C. Blum was elected president, Dr. R. F. Miller, vice president, and Dr. K. M. Hornbrook, secretary-treasurer. Dr. L. P. Stanley and Dr. J. O. Theiss were elected state delegates with Dr. T. B. Gordon and Dr. E. C. Blum as alternates.

The program consisted of an interesting motion picture on "Eclampsia" which was loaned to the society by the State Health Department.

K. M. HORNBROOK, *Secretary.*

X-ray and Peritonitis

Indications that high voltage deep x-ray treatment, given from four to six weeks before operation, may be valuable in preventing peritonitis following operation have been found by W. A. Altemeier, M.D., and H. C. Jones, M.D., Detroit, in a series of investigations which they report in *The Journal of the American Medical Association* for January 6.

Peritonitis, an inflammation of the membrane lining the abdominal wall, frequently is fatal. The two Detroit men were led to conduct their investigations by the report of a surgeon which showed no peritonitis following operation for removal of the lower part of the intestines of fifty-one patients suffering from cancer.

Their observations in animals showed that the maximal degree of immunity to peritonitis occurred from four to six weeks after x-ray treatment, a period which corresponded with that in the cancer patients. They were unable, however, to determine the manner in which this protective action was brought about.

Woman's Auxiliary

Cabell County

The Woman's Auxiliary to the Cabell County Medical Society met on February 12 at Langfitt's Tea Room for a Valentine luncheon. Mrs. E. J. Humphreys, chairman, presided at the meeting and there were thirty-three women present. Professor Stoakes of Marshall College, Huntington, addressed the group with an entertaining subject, "Cashing in on Shakespeare." After the regular order of business was concluded a social hour was enjoyed very much. Next meeting will be on March 11, with Mrs. Walter Swann and Mrs. Russell Coal as hostesses.

MRS. A. G. RUTHERFORD, *Secretary.*

Fayette County

The Woman's Auxiliary of the Fayette County Medical Society held their January 16th meeting at the Faymont Hotel, Montgomery. Mrs. R. A. Updike, president, presided. There were ten members and three guests in attendance. Mrs. Ralph Hogshead gave a review of Dr. Nathan B. Van Etten's address at the White Sulphur Springs meeting last July. There was some musical entertainment furnished by Mrs. R. C. Worsham, violinist, accompanied by Mrs. C. W. Stallard.

MRS. ELIZABETH K. DAVIS, *Secretary.*

Harrison County

The Woman's Auxiliary of the Harrison County Medical Society met on February 1, 1940 at the Gore Hotel, Clarksburg. Mrs. H. H. Esker, president, called the meeting to order. There were twenty-two members present to hear the speaker, Mrs. J. Frank Williams, Jr., on "Medicine's Gift to Mankind."

Their March meeting will be held on the 7th at the Gore Hotel.

MRS. C. F. FISHER, *Secretary.*

Marion County

The Woman's Auxiliary of the Marion County Medical Society met on January 30, 1940 at the Fairmont Hotel with Mrs. J. R. Tuckwiller, president, presiding. Sixteen members were present. Dr. J. W. Davis spoke to the group on "Community Interest in Health." The next meeting will be at the same place, February 27.

MRS. J. W. DAVIS, *Secretary.*

Parkersburg Academy

The Woman's Auxiliary to the Parkersburg Academy of Medicine met on February 14 at the Chancellor Hotel, Parkersburg. Mrs. Welch England, president, presided and thirty members were present. Dr. Athey R. Lutz of Parkersburg was the guest speaker and he had for his topic, "What is Being Done for Crippled Children."

MRS. ARCHBOLD JONES, *Secretary.*

Raleigh County

The Woman's Auxiliary to the Raleigh County Medical Society held their November meeting on the 27th at the Beckley Hotel, Beckley. Mrs. E. S. DuPuy, president, called the meeting to order and seventeen were present. Mrs. J. E. McKenzie spoke on "Hygeia, Its Aims and Purposes." Mrs. G. R. Cunningham presented some interesting current events.

The group voted to give five dollars to the toy fund, also a contribution to the Jane Adams Fund.

On January 29, 1940, the Raleigh County Auxiliary held their next meeting at the Beckley Hotel. Twenty-four members attended and heard Dr. Norman G. Patterson speak on "Medicine in China."

February 26 is the date selected for the next meeting; the place is the Beckley Hotel, Beckley.

MRS. W. C. MAYS, *Secretary.*

Medical Technologists

Chairman Norman H. Davis of the American Red Cross recently announced that at the request of the Surgeon General of the Army and in compliance with its policy of cooperation with both the Army and Navy, the Red Cross, as an expansion of its peacetime service for the military forces, has undertaken the enrollment of various types of medical technologists who are willing to serve in the medical departments of the Army and Navy if and when their services are required at the time of a national emergency.

The plan has been under consideration for almost a year, Chairman Davis said, and has no relation to the present war situation in Europe.

The enrollment now being inaugurated will be similar to that of the nurses reserve which the Red Cross has maintained for the Army and Navy since 1911, and which is now being expanded to include properly qualified male nurses, and also the reserve of dietitians which has been maintained since 1917.

Neighbor Journals

Nineteen Thirty-Nine

The end of another twelve months inspired Morris Fishbein to balance the account of medicine for the last year. In the column of assets he has placed ten worthwhile advances. (1) Sulfanilamide (with its derivatives sulfapyridine and sulfamethylthiazol) is listed as the "drug of the year," being presumably useful in thirty-three diseases; (2) vitamin B_1, the "vitamin of the year," synthetically available, with indications in tics, habit spasms, facial neuralgia and other nerve disorders, has been so effective that it suggests a wider prevalence of deficiency in this vitamin in this country than has been hitherto realized; (3) sex hormone therapy has advanced a step in the recognition of the usefulness of testosterone in so-called male climacteric disorders, and in the extention of the use of estrogen to leukoplakia of the tongue; (4) sobisminol, a bismuth compound, is a new and potent antisyphilitic drug for oral administration in conjunction with intravenous arsenicals; (5) vitamin K, synthetically available, by stimulating the production of prothrombin, has found a place in the treatment of hemorrhage; (6) "frozen sleep" while not curing cancer, has appeared to arrest its growth temporarily and given some symptomatic relief; it opens the way to a new biological approach to the problem of neoplasm in general and perhaps to other diseases; (7) transfusions of blood may be life saving in the treatment of burns; (8) the epidemiology of influenza may be explained by the discovery that the virus is harbored by swine in latent form between outbreaks; (9) surgical advance has been made in the symptomatic relief of angina pectoris; (10) surgical success in correcting some congenital defects of the heart in new born babies is worthy of record.

Other attempts to list the highlights of medical science during 1939 include among notable discoveries: the galactose test in the diagnosis of goitre (T. L. Althausen); neutron rays as a substitute for x-rays in the treatment of cancer; radioactive sodium phosphate in the treatment of leukemia; and oxalic acid as a competitor with vitamin K in the control of hemorrhage. Perhaps of greater fundamental import is the discovery of Kogl and Erxleben that the amino acids of cancer cells are dextrorotary. It has been long recognized that normal cells can only utilize levorotary amino acids. This peculiarity of neoplastic tissues is of more than passing interest and possibly suggests new avenues of approach to a perennial problem.

The last year of the third decade of the twentieth century has helped to make medical history, and a great and unending process goes on.—*Virginia Medical Monthly.*

The Lamp of Experience

The tax supported medical service advocates claim that the best way to provide adequate medical care is by socialization. Carl Glennis Roberts, M. D., of Chicago, in the December, 1939, issue of *Opportunity Magazine* challenges such propaganda and asks:

"Upon what proof does this belief rest? Surely if we are to exchange a system which, for all of its alleged deficiencies and inadequacies has given us the best health standards of any country in the world, the least we can accept in return is a system which assures equal or better results in every respect.

"Does socialized medicine do this? Our best proof is in the example of those countries which have fallen captive to its lure. Does it excel our results in decreasing loss of working days, conserving health, prolonging life, providing more and better medical care? Germany is where it started, so let us compare the German report for the year of 1937 with that of the United States:

Germany—Sickness cost employer five per cent of income. Sickness cost to employee 8.5 per cent of income. Total: 13.5 per cent. Loss of working days, 17 per cent.

United States—Cost to employer and employee three per cent of income. Total: Three per cent. Loss of working days—six per cent.

Difference of 10 per cent—cost of administration and red tape.

More important than income is death rate. Let us contrast this rate in comparing Germany, England and the United States for the years 1933 and 1938:

Mortality: 1933:

51 German towns	8	per cent
118 English towns	8.2	per cent
88 American towns	2.3	per cent

United States mortality rate for cities and country: 2.9 per cent.

England, January to July, 1938, death rate: 12 per 1,000.

United States, metropolitan industrial death rate: eight per 1,000.—*Illinois Medical Journal.*

Consultants

Consultation is often desirable. Alas, consultation too often results to the detriment of the physician referring the patient. This should not be. The ideal relationship between physician and consultant results in help, not harm to the former.

Charlatans and quacks do not refer patients. Imitators of charlatans and quacks among inferior physicians do not refer patients. The higher type of physician is more apt to refer patients than the lower type. What leads him to refer a patient? It is honesty, conscientiousness, keen concern for the welfare of the patient, and desire to do the best for him. Referring a patient is not necessarily a confession of weakness nor of inferiority; it may be an indication of strength.

It is perfectly true that no higher motive than self interest need induce the consultant to be helpful to the physician who refers the patient. If confidence in the referring physician is augmented, he will be in a position to refer more patients.

More mistakes are made by the referring physician not accompanying the consultant in his visit to the patient. Physicians in the preceding generation were very meticulous in the manner in which consultations were carried out. The referring physician entered the room first and on leaving the room, followed the consultant. The reason was obvious. They then retired to discuss the patient in private. The discussion of the case in private was a fundamental part of the consultation which might well be perpetuated. Telling the patient about findings or giving advice on the part of the consultant is not to be tolerated unless he is specifically requested to do so.

The consultant must feel a kindly attitude toward the ability of the referring physician. After all, he may be the better physician. Any lack of respect for the referring physician is sure to color the consultant's remarks to the detriment of the former in the eyes of the patient.

The referring physician places a very precious possession in the keeping of the consultant; his reputation and prestige. The trust should not be betrayed. The consultant has a right to feel honored at being consulted. His words and actions

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should show every respect for the patient's physician. Any other attitude often acts as a boomerang to the discredit of the consultant.

The whole purpose of a consultation is the patient's welfare. Only by careful observance of the details mentioned will the patient obtain the greatest benefit from a consultation and credit accrue to both physicians.—*Minnesota Medicine.*

Cobra Venom For Arthritis

Cobra venom offers possibilities of proving of value for the relief of pain from neuralgia, arthritis and related disorders, Otto Steinbrocker, M.D., George C. McEachern, M.D., Emanuel P. LaMotta, M.D., and Freeman Brooks, M.D., New York, reveal in *The Journal of the American Medical Association* for January 27 in a report that 59.01 per cent of 61 patients in whom they injected venom were slightly or moderately benefited.

The results from injections of cobra venom are compared by the investigators with those obtained from injections of saline (salty) solution in thirty-six patients also suffering from arthritic disorders, only seven of whom experienced any benefit.

BOOK REVIEW

The Story of Dusty Lungs

Pneumoconiosis (Silicosis) The Story of Dusty Lungs, by Lewis Gregory Cole, M. D., director of Silicotic Research, John B. Pierce Foundation, and William Gregory Cole, M. D., New York City. Sixty-nine pp., 28 illustrations. First edition. Cloth. Published and distributed by the Foundation. Price $1.00.

This monograph is recommended to every physician engaged in general practice in industrial or mining areas. Those of us who recall Gauley Bridge will see its value immediately. The authors have presented the subject in language that can be understood and appreciated by all those who have previously been bewildered by technical discussions on a highly technical subject. There is no phase of the problem of pneumoconiosis which is not well covered in the book. Not the least of the high points in this monograph is the index and perhaps the greatest value in this work lies in the orderly presentation of material.

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*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, Vol. 23, No. 2, pages 201-206, March, 1939.

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It is a rare privilege to review a monograph so authoritative and yet so remarkable in its clarity. No physician in these days of dusty industries, and increased litigation should be without a copy.

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Control of Trichinosis

Because there is no specific treatment for trichinosis, a parasitic disease which is transmitted to man chiefly through improperly cooked pork and of which an estimated 18 per cent of the American people are potential victims, preventive measures are imperative for its control and eradication, a special committee declares in *The Journal of the American Medical Association* for January 6. The committee, appointed by R. C. Pollock, Chicago, chairman of the Advisory Council on Livestock and Meat Research, is composed of W. Lee Lewis, of the Institute of American Meat Packers; Anna E. Boller, of the National Livestock and Meat Board; H. Preston Hoskins, of the American Veterinary Medical Association; L. A. Merillat, of the U. S. Livestock Sanitary Association, and H. R. Smith, of the Sanitary Committee of the National Livestock Exchange.

Recent studies indicate, the committee report states, that approximately 18 per cent of Americans harbor the larvæ of Trichinella spiralis, the parasite causing the disease. However, many of them do not

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have a sufficiently heavy infestation to cause any of the symptoms of the disease, which include digestive disturbances, fever and sometimes severe wasting.

The preventive measures which the committee recommends include direct control by adequate and thorough cooking of all pork not specially processed in a manner adequate to destroy the larvæ, and indirect control by eliminating the source of infection of swine. The presence of the parasite in susceptible animals, they state, occurs as a result of their eating uncooked or untreated muscle of an animal infected with trichinella larvæ. Consequently they urge the following measures in order to break the life cycle of the parasite: "All pork scraps that are to be used for garbage should be cooked. This does not necessarily mean that all garbage should be cooked, but it does mean that uncooked pork scraps should not be allowed in garbage. If this is not practical, garbage should be cooked before it is fed to hogs. Access of hogs to all other trichinella-infected animal tissues should be prevented."

A cooking temperature of 137 F. in every bit of the pork prepared for eating will destroy all the parasites. As has been stressed many times previously pink pork is undercooked pork and should not be eaten without further cooking.

"At the present time," the committee states, "there is no known practical method of inspection whereby the muscle tissue of pork can be adequately examined for the presence of trichinella larvæ.

"Certain products containing pork muscle tissue are rendered safe for consumption without subsequent cooking by the consumer by rigid treatment prescribed by federal meat inspection. This treatment is based on exhaustive scientific research and involves refrigeration, heating or curing. Among the products so treated under federal inspection are ready to eat hams, Italian style hams, capicoli and Canadian style bacon.

"The Bureau of Animal Industry of the United States Department of Agriculture designates that 'no article of a kind prepared customarily to be eaten without cooking shall contain any muscle tissue of pork unless the pork has been subjected to a temperature sufficient to destroy all live trichinæ or to other treatment prescribed by the Chief of Bureau.'

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which the consumer customarily cooks does not mean that the product so marked is necessarily free from Trichinella spiralis.

"It has been stated that the prevention of trichinosis is a personal responsibility and involves the thorough cooking of all pork. Pork products customarily eaten without cooking are also dangerous unless it is definitely known that they were prepared in a plant operating under federal meat inspection or equally thorough state or local supervision."

There are three stages of the disease and each stage corresponds to the behavior of the parasite in the body.

1. The period of invasion of the host by the parasite, that is when it develops to maturity in the human intestine, is marked by nausea, vomiting, diarrhea and abdominal pain.

2. In the period of dissemination of larvæ, when the larvæ are carried into the lymphatics and blood stream to be distributed to the striated muscles, fever, muscle tenderness, swelling about the eyes and an increase in a certain type of white blood cells occur. These symptoms may become pronounced within from ten days to two weeks after infection.

3. The period when the larvæ become enveloped in a sac is the convalescent period in mild involvement. However, in overwhelming infections marked swelling of the face, severe wasting, delirium and coma may occur.

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As for treatment, there is no completely satisfactory one. If a physician is consulted early enough, the administration of a remedy destructive to worms may be effective in removing some of the adult organisms from the intestinal tract. However, after the larvæ have gained entrance to the circulatory system or have infected the muscles, medical treatment can only relieve the pain and discomfort. Preventive measures, therefore, must be employed in coping with trichinosis.

Surgical Service Contributions

Acting for approximately 100 West Virginia surgeons who last fall contributed more than $70,000 in service "due bills" to the State Department of Public Assistance, the Association's Advisory Committee has set the necessary machinery in motion to utilize the contributions beginning March first. The plan was "ready to go" in December but has been held up awaiting the appointment of a new D.P.A. medical director.

The machinery for utilizing the contributions is as simple as the Advisory Committee could possibly make it. Only one form is required. When a qualified relief client is referred to one of the contributing surgeons, this form is filled out by his local D.P.A. office and sent to the surgeon to whom the case is assigned. The form gives the patient's name, family doctor and tentative diagnosis. When the case is completed, the surgeon notes the disposition of the case, together with the fee to be credited toward his contribution, on the same form and mails it to the Association headquarters. All records are kept by the Association.

In a recent bulletin to all of his county directors, Mr. A. W. Garnett, State D.P.A. Director, set forth the provisions and restrictions to the plan which were worked out by the Advisory Committee. It has been agreed between Mr. Garnett and the Advisory Committee that all funds saved to the Department of Public Assistance by virtue of the surgical contributions will be applied to render more adequate and complete "family doctor" medical service to relief clients.

The outcome of this experiment will be watched with utmost interest by relief officials and organized medical groups. The Association has already received numerous inquiries about the plan from other county and state medical societies.

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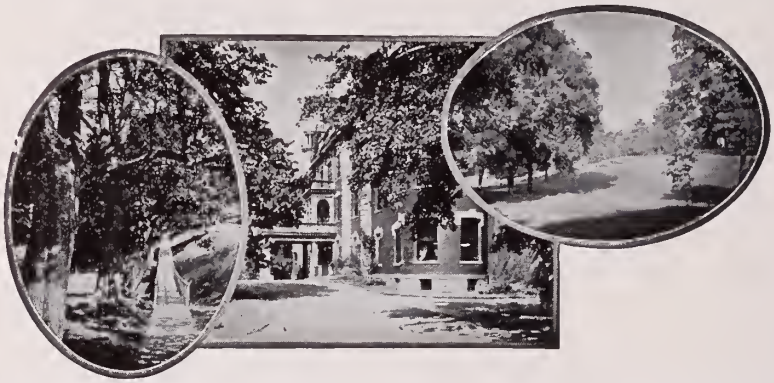

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CARCINOMA OF THE BREAST*

By E. P. BUCHANAN, M. D.
Pittsburgh, Pennsylvania

My talk this evening will consist of two parts: First, a review of the history of breast surgery from the latter part of the seventeenth century and, second, a consideration of the causes for the high mortality from breast cancer and the procedures by which this mortality can be reduced.

As an excuse for a lack of oratory which my subject deserves, I take refuge in a quotation from Richard Wiseman:

"The nobility and dignity of Chirurgery are too well known to want the help of an Oratour to set them forth. If a Panegyrick were necessary, it were best made by running through the Particulars of the Art, and the History of the Diseases cured thereby. He that shall duly consider the deplorable misery of mankind and how much it wanteth relief in such a multitude of Instances, must needs acknowledge us to be what Antiquity hath long since called us, vis, The Hands of God."

These words appear in The Epistle to the Reader in this volume which I have before me, printed in London in 1676. To the best of my knowledge this is one of the earliest texts on surgery written in the English language. I shall quote from it and other texts of a somewhat later date.

THE AUTHOR

Dr. Buchanan, graduate Harvard University Medical School; F. A. C. S.; Assistant Professor Surgery University of Pittsburgh School of Medicine.

This author states: "Cancer is the name of a Tumour arising (as it is thought) from an adust or atrabilious Humour. It is round, unequally hard, and (if not inflamed) of a livid or brown colour, with exquisite, pricking pain. * * * The Cause of a Cancer is usually said to be adustion of Humours, which upon an overconcoction or rather broiling grow retorrid and sharp.

"I cannot imagine," he continues, "what heat these Authors suppose to be in the Body which is capable of making such an Adustion as is here spoken of. * * * We see the highest Fever not attended with a Cancer, and on the

*Read before the Harrison County Medical Society at Clarksburg, West Virginia, January 1, 1940.

contrary a Cancer not often attended with any extremity of heat.

"The remote Cause of this Tumour," he says, "is either a fault in the original Constitution of the Body, or an acquired one, as by Bruise, Tumours, ill handling, etc. Or it may be an error in Diet, viz., a great acrimony in the Meats and drinks meeting with a fault in the first Concoction, which not being afterwards corrected in the Guts, suffers this acrimonious matter to ascend into the Bloud; where if it find vent in the Menstrua in Women, or by the Hemorrhoids, or by Hemorrhagia, or Urine, or the like, the mischief may be prevented; but if upon any defect in those the Humours divert to some other peculiar Part, then the foundation of this Disease is laid. * * *"

DIFFERENT CANCERS

He continues: "The Differences of Cancers are many; some whereof are with ulceration, others not. The Cancer not ulcerated is of two sorts. The one is visible and evident to the sight in the exterior Parts of the Body, and beareth the name of Cancerous Tumour; the other is within the Body, and is called a Latent or Occult Cancer. * * * Others call all those Cancers occult which are not ulcerated, amongst which may be reckoned those which are felt in the Glands of the Breast, etc. Of these some are loose and movable, and sometimes so hard that they have knocked against one another like Pebbles; if it be not more fit to call them Schirrhi; others again are hard and fixed to the Bones. * * * Other differences may be taken from the Humour to which they owe their Original. If the Matter be not very corrosive, their growth is slow, and they are not very painfull. These are called the milder sort of which I have had many under my care; and some of those affecting the Breast I have palliated a long time with easie Remedies. If any man will, instead of mild or occult cancers, call them Scirrhous Cancers, I shall not gainsay him.

"Of all the Diseases which afflict mankind the Cancer is the most grievous and rebellious, and is generally incurable, by reason of its corrosive and malign venom fermenting in the Humours, which, so far as we can find, yields neither to Purging, Bleeding, Repellents, Discutients, Suppuratives, nor any other Medicine inward or outward.

"Those which lie superficially under the Skin may be attempted by the Chirurgeon's hand; or if they rise from an external cause as Bruises, etc., though they lie deeper, they may be cut off or otherwise extirpated. But those that arise from a corrosive quality in the Humours though they may be cut off or otherwise extirpated, yet the success is most doubtfull."

After reading all this author has to say regarding cancer of the breast, there are several things that strike one very forcibly. Their ideas regarding etiology appear to us most ludicrous. Many non-malignant breast lesions were diagnosed cancer as in the observation of a twenty year old girl with a freely movable oval mass in the breast.

Quoting this author: "The cure of a Cancer in general consisteth in three Intentions: first in the generation of good Bloud; secondly, in correcting and evacuating of the atrabilious Humours in the Body; thirdly, in preventing the growth of the Tumour, and disposing it to Discussion."

USE OF LEAD AND GOLD

The generation of good blood was supposedly brought about by proper diet. Correction and evacuation of acrimonious humors was carried out by purgation and blood letting. Among the drugs used to check and dispose of the growth—repellents and discutients—were lead and gold applied in ointment form. These two metals have been recently advocated in the treatment of inoperable cancer.

"If notwithstanding all your endeavors the Tumour increase," the author says, "and be like to ulcerate, you may do well to forewarn the Patient of the danger; and if it be loose, and in a place where it may be safely extirpated, propose it to them, lest afterwards they desire it when it is too late.

"That you may be more successful in the

Operation, I shall offer to your consideration these few Qualifications: First, that the patient be of a strong constitution, and of a tolerable good Habit of body, and not in a declining age, when the Menstrua are ceased. Secondly, that the Cancer be loose and the Axilla free from painfull Glands. It were also to be wished that the Cancer took its Original from some Accident, as a Bruise, etc. Thirdly, that the Operation be performed in the Spring or Autumn of the year. * * *

"A Lady coming to Town with a Swelling in her left Breast consulted some of our Profession and at last me. She said she had some years since Kernels in her Breast, which were judged the King's Evil; upon consideration of which she was presented to HIS MAJESTY, and touched. In progress of time they swelled, and her Breast being extremely painfull, she desired my judgment of it. The swelling was large and round, and greatly inflamed, under which it was soft, and seemed to have Matter in it. The Parts more distant were hard, and several Tubercles lying under the Skin made it unequal, yet the Breast was not fixed. She urged me instantly to deliver my thoughts of it, which to decline, I turned from her and told her Friend it was a Cancer, and that I saw no hopes to save her life but by cutting it off. He wished me to consider how I delivered such judgment of it, two Chirurgeons having lately assured her the contrary, they taking it for a Phlegmon. But I not being used to guide my judgment by what others delivered, confirmed to him what I before said by a sad prediction, which befell her within a few weeks after. And indeed there was no way then to deal with it but by cutting off her Breast."

CHIRURGICAL OPERATIONS

Passing over a period of only 35 years let us consider the writings of Monsieur Dionis. His textbook entitled "A Course of Chirurgical Operations, Demonstrated in the Royal Garden at Paris," published in 1710, seems to offer some advance in the understanding and treatment of cancer of the breast.

Quoting from this author:

"A Cancer is universally agreed to be the most terrible of all the Evils which attack Mankind; though Wars and Plagues kill in less time, they don't yet, to me, seem so cruel as the Cancer, which as certainly, though more slowly, carries those afflicted with it to the Grave, withal causing such Pains as make them every day wish for Death.

IMPOSTHUMATED CANCER

"The imposthumated Cancer is originally a small, round, flat tumour, of the figure of a Lentile, and sometimes long continues without increasing. At its rise, 'tis often free from Pain, then augmenting by slow degrees, 'tis attended with pain, which increases in proportion to the growth of the Tumour, 'till it becomes insupportable. * * * When the Cancer is grown big, the Tumour is hard, scirrhous, rough, livid and painful, very adhesive by reason of its numerous Roots, and remarkable on account of the veins of black Blood disperst over its whole superficies."

He continues: "Extirpation is practis'd when the Cancer is not open, and the Tumour is no bigger than a Walnut, or, at biggest, a small Egg. * * *

"Amputation is performed when the Cancer occupies the whole Breast, or when 'tis ulcerated, and its Lips appear to the Eye dismal, hard and corrupted. * * *

"I shall conclude this Article," he says, "with the Relation of one which was cut off at Marseilles about four years since. Passing through that City with the Princes, Monsieur Du-Chêne and I were desired, by Monsieur le Bailly de Noailles, to see Madam de Montreuil, who had been long afflicted with a Tumour in her right Breast. Two of the most celebrated Physicians, and two Chirurgeons met us at the Hour appointed by Monsieur Du-Chêne, and endeavored by long Discourse, to prove that the first Cause of this Tumour proceeded from that Lady suckling one of her Children about Ten Years past. The other thought he hit the Mark better, in pretending that her Husband having had a Venereal Distemper, might have communi-

cated it to his Lady, and that this was the true Cause of the Disease in question. When it came to My turn to speak, I told them, that they talked like able Physicians, who dwelt no small time on the Causes of Diseases, and sometimes assigned very remote ones; that for my part I talk'd like a Chirurgeon, and concluded that 'twas a perfect Cancer; that without branching myself out into long Arguments to prove it, they need only to look upon it, and that I knew no other Remedy in the present Case, than Amputation."

Such was the treatment of cancer of the breast—extirpation of a small cancer and amputation if a large or ulcerated cancer—as practiced by Pierre Dionis, 230 years old. His treatises on anatomy and surgery were standard works for over half a century and translated even into Chinese.

Next let us consider what Charles Bell has to say of cancer in his "System of Operative Surgery," published in London in 1809, just 100 years after the time of Pierre Dionis.

TUMOR OF A GLAND

He defines carcinoma as "A tumor of a Gland, in a state of activity approaching to cancerous ulceration. The tumor is hard and unequal; * * * the skin is purple or livid red, and the cutaneous veins are enlarged. To the term Cancer we find the words OPERTUS and OCCULTIS joined; the first meaning the open ulceration, and the other, the sense I have given to Carcinoma."

He states: "The perfect reliance which, within the last thirty years has been placed on the excision of the Mamma, for the entire extirpation of the cancer, is in the present day considerably diminished. * * * Often, I believe the gland is like the tuberculated state of the lungs, an occasional excitement is only wanting to give vigor to the latent disease. This kind of reasoning would deter me from extirpating tumours situated in the substance of the gland, leaving the gland itself behind. The tumour must be very free and insulated, and superficial, which I would cut out without taking the breast along with it. * * *"

This author describes a simple mastoidectomy in the absence of enlarged axillary lymph nodes, taking particular care not to cut through any grossly involved tissue. When the growth was adherent to the pectoral muscles some of their fibers were removed. Dissection of the axillary nodes was considered a much more serious operation, the technique was poor and hemorrhage was often profuse.

In "Pancoast's Operative Surgery," published in Philadelphia in 1846, he advocates excision of diseased axillary glands by enlarging the breast incision upward into the axilla and dissecting out the glands en masse still attached to the breast by connective and lymphatic tissue.

RADICAL MASTECTOMY

It was not, however, until 50 years ago that Wm. S. Halstead, of Baltimore, first practiced and described radical mastectomy with the removal en masse of the breast, muscles and axillary fat and nodes—in short, the same technique commonly employed at the present time.

Passing on to the second part of this paper let us consider the reasons for the high mortality of breast carcinoma and means by which it can be lowered. Over 14,000 women die of this dread disease in the United States every year. This number could be greatly reduced, but in order to do so we must first educate the medical profession as well as the public. It is my intention to present to you the facts and place the blame where it actually belongs. It can be laid to four classes of people: (1) the patient herself, (2) the family physician or another not qualified to pass final judgment on such a case, (3) the inexperienced surgeon whose surgery is inadequate, (4) those who treat operable carcinoma of the breast by other means than radical surgery.

By far the largest percentage of women with advanced carcinoma have not sought medical advice early either through ignorance of the danger signs, lack of discernment of any change in the breast, desire to conceal

their ailment from their relatives and friends, the false impression that no cancer is curable, or their fear of surgery.

What are the danger signals? First and most common is a mass in the breast. This may be manifested as a distinct lump, an induration, an increase or decrease in the size of the breast or a retraction of the nipple. A second danger signal is discharge from the nipple—chiefly a sanguineous discharge. A third danger signal is an intractable dermatitis of the nipple later going on to complete obliteration of that landmark, commonly known as Paget's disease. Pain unfortunately is an early symptom in a very small percentage of cases of breast cancer, but is the symptom most likely to hurry the patient to a doctor.

UNSCRUPULOUS PRACTITIONERS

Most women whom I have examined complaining only of pain have no demonstrable lesion within the breast, or have a very low grade chronic cystic mastitis. Such patients occasionally fall into the hands of ignorant or unscrupulous practitioners who tell them they have cancer and require immediate surgery or some other type of therapy. A number of such cases have come under my observation.

Many women who live in dread of cancer all their lives and who are constantly on the alert to detect any trouble in the breast, fail to discover the signs when they appear. Many a patient have I examined within a few days or weeks after she discovered a lump only to find that she had an advanced carcinoma with axillary metastases. Dr. Stewart Harrington, of the Mayo Clinic, only recently expressed to me his opinion that most women have no idea how long a cancer has existed in the breast. It may be months or over a year before they discover it.

It is not an uncommon story when examing a woman with advanced carcinoma of the breast, for a sister, daughter, or even a husband to say that the patient has kept the entire family in ignorance of her condition.

Not infrequently after examining a breast and telling the patient that it should be removed she will say: "If you think it is cancer I will not let you touch it." So many women have had friends die following operations for breast carcinoma that they believe no case was ever cured and that surgery precipitates death in such conditions. Operations performed in advanced cases, and incomplete operations, have given surgery a black eye. It is the duty of the surgeon to explain that the main reason for operating on the breast is the possibility that the condition may be cancer. If diagnosis were 100 per cent correct, we would rarely be justified in operating on a non-malignant condition. You must impress upon the patient that it is the disease that is to be feared rather than the operation.

This leads us to the second indictment, namely, of the family physician, internist, gynecologist, obstetrician and others. I do not mean to condemn any class of physicians, for there are many men in every branch of the profession who routinely make a practice of referring without delay these cases to the surgeon. On the other hand, there is not a group I have mentioned that does not contain many members who have overlooked cancers of the breast in their early stages. The family physician, constituting the largest group and the one which generally sees the patient first is responsible for the most deaths. The gynecologist and obstetrician probably come next, as their patients are all women—mostly of the cancer age.

EARLY DIAGNOSIS

Recently a surgeon told me he had operated on three breast carcinomas, all of them missed in their earlier stages by the same gynecologist. The two gynecologists in the Mercy Hospital, Pittsburgh, make a practice of routinely examining the breasts of all their patients and any abnormality which is found is referred to the general surgeon. So many doctors feel that in every case they must make a diagnosis and wait until the textbook characteristics appear before referring the case for surgery. Diagnosis of early carcinoma of the breast may be exceedingly difficult and at times impossible without a biopsy. Unless carcinoma of the breast is to be treated early

by radical surgery the mortality will continue to be high. A breast surgeon of vast experience told me that his hands were tied. He is afraid publicly to mention the fact that the family physician is often responsible for the delay, for this would destroy the patient's faith in her family doctor. Should not this faith be destroyed until the family physician has proved himself worthy of the trust bestowed upon him? To prove my point I should like to cite a case. I am acquainted with a roentgen therapist who had his training at the Mayo Clinic. A doctor referred to him a women with a diagnosis of "menopause bleeding." This had been going on continuously for six months, but she had never had an abdominal or pelvic examination. The roentgenologist said he would not treat her until she had been properly examined and carcinoma of the fundus uteri ruled out. The family physician said he had known the patient many years and she did not have carcinoma, and that he would refer the patient to someone who would give her "menopause doses of x-ray." The breast surgeon is frequently handicapped by delay on the part of the family physician. I have seen dozens of breast cancers where the patient has been told to forget the lump, or it has been watched until the growth was far advanced or inoperable.

THE GENERAL PRACTITIONER

Let us pass on to the third group—the general practitioner who would like to do surgery and will remove a breast tumor in his office; the part time surgeon and the surgeon who has had inadequate training in this work, being unfamiliar with gross pathology and possibly not having the help of a trained pathologist at the time of operation. Scarcely a week passes that I do not see a patient who is the victim of poor breast surgery. Too many surgeons are inclined to the belief that they can excise a breast tumor or do a simple mastectomy and then depend on x-ray to cure the patient. Incomplete breast surgery is worse than no surgery.

Now as for the fourth group—those who treat operable breast carcinoma by other means than radical surgery. In our educational cancer campaigns the public and some physicians have been led astray by the statement that there are only two recognized treatments for cancer—surgery and irradiation. Many fail to recognize that the two are not of equal value in all conditions. Irradiation has its place in cancer of the cervix uteri and certain skin lesions, but it is not to be used to the exclusion of surgery in operable cancer of the breast. Only a limited percentage of breast carcinomas are radiosensitive. Before he died Dr. Burton Lee, of the Memorial Hospital, New York, told me he had never seen a proven breast carcinoma cured by irradiation alone. I have seen many of them treated until they were far advanced.

HARMFUL STATEMENTS

About ten years ago I heard a radiologist make the statement before a large gathering that Sir Berkeley Moynihan had said that he would never operate on another cancer of the breast. Shortly before he died, Dr. Joseph C. Bloodgood published an article in the *Journal of the A. M. A.* in which he said that he was then treating early carcinoma no larger than a ten cent piece by wide excision and proper irradiation. Who knows what is proper irradiation? Such statements as these do irreparable harm. Dr. Bloodgood's statement, as you can see, is meat for everyone who ever held a knife. It makes breast surgery too easy.

By this time we have pointed out many ways by which the mortality in breast carcinoma can be lowered, but let us take these up a little more fully. First, since many women have trouble in the breast of a serious nature for a long time before it is discovered —every women of 25 or over should have a periodic examination every six months by someone capable of discovering early breast pathology.

Women should be instructed how to examine their own breasts and should do so at frequent intervals. Every general practitioner should examine the breasts routinely, no matter what the patient's complaint. If there

is a mass, discharge from the nipple, eczema or other abnormality the case should be referred without delay to a competent surgeon. His should be the responsibility.

In order not to miss any malignancy in the breast, many non-malignant tumors must be removed. The number of malignant and non-malignant tumors are usually about equal. In a series of 550 breast operations, approximately 50 per cent of this number is for non-malignant disease. Our preoperative diagnosis has been incorrect in approximately 10 per cent of cases, i.e., 10 per cent of the cancers were unsuspected before operation and 10 per cent of the benign lesions were suspected of being cancer.

NON-MALIGNANT BREAST LESIONS

A patient who has formerly been operated upon for a non-malignant breast lesion should not consider a subsequent mass to be of the same nature. I have seen carcinoma follow, in a period of several years, fibroadenoma, chronic cystic mastitis and tuberculosis either in the same or the opposite breast. On the other hand, I have seen chronic cystic mastitis develop in the second breast following a radical mastectomy for carcinoma. Two masses in the same breast usually point to a non-malignant condition, but I have seen carcinoma with a solitary cyst in the immediate vicinity, carcinoma and fibroadenoma, and carcinoma invading a large fibroadenoma. About 16 per cent of our cases of carcinoma show chronic cystic mastitis. Approximately three per cent of breast cancers develop a second primary carcinoma in the opposite breast. This must not be confused with carcinoma in the second breast by direct extension. Only once have I seen early carcinoma at the same time in both breasts. A bilateral radical mastectomy was performed at the same operation and this patient is alive and well, seven and one-half years later.

In my series of cases 60 per cent of fibroadenomata first appear in the teens and twenties, and 60 per cent of chronic cystic mastitis occur in the forties.

Carcinoma in the young is generally considered very malignant, but my two patients of twenty-five years of age are both alive and free from symptoms—one at the end of eight years and the other at the end of 14 months. Cancer developing in a lactating breast or with symptoms of acute inflammation is usually rapidly fatal, but I have one patient who carried a carcinoma of the breast all through her pregnancy and nursed her baby for six weeks on the advice of her family doctor, and she is alive and well now, five and one-half years following radical mastectomy.

A number of radical mastectomies have been performed on non-malignant lesions which had all the physical characteristics of carcinoma either without first doing a biopsy or after a frozen section diagnosis of carcinoma had been made. There are certain growths which can be diagnosed only on paraffin section. When diagnosis may be so difficult for the trained surgeon and experienced pathologist, can we expect the general practitioner who sees an occasional case always to make a diagnosis and assume the responsibility? Yet there are many who are willing to do this.

An inexperienced surgeon who removes a breast growth in his office has not the interest of his patient at heart. Anyone who is not capable of performing a radical mastectomy and has not an experienced pathologist and adequate laboratory at his command, should not undertake breast surgery. Hospitals permitting such practices should not be on the approved list. My association with the Pittsburgh Skin and Cancer Foundation has enabled me to view the work of many surgeons and there we see the results of all kinds of breast surgery.

Time will not permit a detailed discussion of the treatment of the breast case. Any lump in the breast apparently benign or doubtful, should be excised without delay in the presence of a competent pathologist. When necessary, a frozen section should be made at the time. If it proves to be cancer, a radical mastectomy should be performed while the patient is still under the anesthetic.

In growths apparently malignant a radical mastectomy should be performed, removing a liberal margin of normal tissue. With extensive ulceration we usually first do a simple mastectomy to avoid contamination, and then proceed to the removal of the muscles and the dissection of the axilla. Where there is bleeding from the nipple, but no palpable mass a simple mastectomy is performed and the breast sectioned. If there is evident carcinoma, a radical mastectomy is performed. A sanguineous discharge usually means a duct carcinoma, a duct papilloma or more rarely a chronic cystic mastitis. Cancers firmly fixed to the chest wall, carcinoma en cuirasse, cancers with supraclavicular or proven distant metastases are considered inoperable. Occasionally mastectomy is indicated as a palliative measure.

Postoperatively these patients are encouraged to get up in two days after operation and motion of the arm is begun at this time when the drains are removed. The clips and sutures are removed in six to seven days, and at that time the patient is frequently ready to leave the hospital.

AXILLARY NODES

It has been my practice in recent years to irradiate postoperatively only those cases which show involvement of axillary nodes microscopically, carcinomata in young women, and the most malignant type of growth. Preoperative irradiation is not used, although some cases which appear inoperable may become operable following radiation. In his recent paper on breast carcinoma before the Pennsylvania Medical Society, Dr. Harrington stated that he now employs x-ray postoperatively only in grades III and IV carcinomas with axillary involvement.

As I have before mentioned, many cancers of the breast are "radio resistant" and we have no assurance that irradiation in some cases does not do harm to the healthy tissues.

Frequent check-ups should be made postoperatively. With radical surgery a patient will rarely develop a local recurrence. When they do there are usually widespread skin metastases unrecognized at the time of operation. The majority of our cases that die usually show no carcinoma on the outside of the body. They do not die of recurrence. They die of unrecognized metastases which were beyond the reach of surgery at the time of operation.

These may be slow to manifest themselves —depending on the malignancy of the growth and the resistance of the patient. So-called recurrences may appear as late as 10 and 15 years after operation.

In my series of 270 mastectomies for carcinoma and 265 operations for benign lesions, there have been two operative deaths, both from virulent streptococcic infection. No operable case has been refused operation on account of complicating disease or old age. The youngest patients with breast carcinoma were 25 and oldest 83 years. Eighteen were past the age of 70.

Fifty-six or 20.7 per cent of the operated cancer cases had such serious complications that many of them had been previously told they would never stand operation.

The following is a list of the complications:

Hypertensive heart disease	25 (Diastolic 100+)
Mitral stenosis	4
Auricular fibrillation	3
Aortic regurgitation	1
Cardiorenal disease (advanced)	1
Hemiplegia	3
Senile dementia	3
Cerebral lues	1
Tabes dorsalis	1
Diabetes	3
Uterine bleeding (non-malignant)	3
Pyonephrosis	1
Pyelitis	1
Goitre	4
Cancer of cecum	1
Prostatic hypertrophy	1

Patients refusing operation should always be told that operation carries a very low mortality and it is the disease that should be feared rather than the operation.

Ether is the anesthetic of choice when given by a skilled anesthetist. Occasionally we employ avertin and ether, and in the very bad risk we use 0.5 per cent novocaine locally.

To summarize, I have endeavored to trace the progress which has been made in breast surgery during the past 260 years—beginning at a time long before the pathology of the

disease was understood and before the days of anesthesia and asepsis. I have brought to your attention the high mortality which still exists in cancer of the breast, I have endeavored to point out some of the reasons for this mortality, and have made suggestions which, if carried out, will aid materially in its reduction.

THE TREATMENT OF CORONARY OCCLUSION*

By WALTER C. SWANN, M. D., F. A. C. P.
Huntington, West Virginia

TWENTY years ago when the diagnosis of coronary occlusion was made it was considered a death sentence for the patient. There was very little done for the victim except to try and relieve his pain with morphine. The family was told of the serious nature of the accident and what to expect. In the present era one sees many patients recover and live long and useful lives.

The treatment of coronary occlusion should be considered under three distinct periods. First, comes the period of occlusion and shock; second, the period of bed rest and, third, the period following healing of the infarct. The problem one deals with in each of these three divisions is different enough to deserve special consideration for each period. One should have a plan of treatment but be ready to change to meet the problems of each individual case.

Morphine is without doubt of first importance in period number one. Usually the patient is in considerable pain, is restless and walking the floor, or is more or less in a state of shock. Morphine is given to relieve pain, help prevent shock, allay apprehension and to insure quiet. The morphine is best given dissolved in two cubic centimeters of coramine. Repeated doses of one-fourth grain should be given every thirty minutes until pain is controlled. The size and frequency of the dose should be varied to meet the requirements of each individual case but an effort should be made to avoid depressing the respiration to any great degree. Coramine is a safe and active stimulant both for respiration and coronary circulation.

THE AUTHOR

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Immediate steps should be taken to supply oxygen inhalation for the patient. Not nearly enough emphasis is placed upon the importance of oxygen in the early treatment of coronary occlusion. Recent books and publications in journals do recommend the use of oxygen, but say the indications are cyanosis, dyspnea and relief of pain. In the author's opinion the size of the infarct will be somewhat controlled by the immediate use of oxygen. The time between the onset of pain and the use of oxygen is very important. The supply of extra oxygen that may be carried by the small collateral vessels to the infarcted area is of greatest importance immediately after occlusion has occurred because the size of the infarcted area may be cut down from one that would most surely rupture or cause congestive failure to one that can be healed. However, if one delays giving oxygen it may be of benefit even hours or days after the occlusion, but not nearly as effective in limiting the size of the infarct. Oxygen will also relieve dyspnea and help to prevent pulmonary edema.

As soon as possible get the patient in bed and keep him there at absolute rest. It is better to take the first opportunity to explain

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to the patient his exact condition. This will get the cooperation that one must have to get best results. Care must be used in explaining the situation to the patient. Tell him frankly that a small blood vessel has been plugged up inside his heart muscle. Describe the resultant infarct as a small spot like a rotten place in an apple. Suggest the need for absolute rest, ask him to refrain from any straining, sneezing or coughing so that the infarct will have a good chance to heal firmly. Tell him he must lie quietly in bed for approximately six weeks. Assure him that if he will cooperate in every way he will make a good recovery and have a better functioning heart muscle.

SEDATIVES

Sedatives such as nembutal should be used in place of morphine after the first few days. Oxygen inhalation has been shown to shorten the days of pain so that less morphine will be required. Glucose solution intravenously during the period of shock should be used. In the presence of peripheral failure which one sees in the early stages the amount of glucose solution should be increased. Aminophyllin can be added to the glucose solution and may be of some benefit. The effectiveness of aminophyllin in coronary disease is in doubt. Certainly it will do no harm and until further proof of ineffectiveness is shown one should probably continue to give it routinely. Hypodermatic coramine should be continued for the first four to ten days, especially during the period of low blood pressure. Various good reports of the use of coramine have appeared in the literature on treatment of coronary occlusion. Joseph Cowan writing in the *American Journal of Medical Sciences* gives a good review of the literature on coramine and shows through case reports the good effects obtained. After the first ten days coramine may be given orally in fifteen or twenty drop doses for its possible coronary dilator effect.

Epinephrine should be reserved for cases showing a complicating heart block or for heart standstill. Shookhoff through experimental work has shown adrenalin injections to produce RT changes in the electrocardiogram like those found in acute coronary occlusion. Also some persons who have angina of effort may be thrown into an attack by the injection of adrenalin.

Quinidine is recommended for the treatment or prevention of ventricular fibrillation. In a series of five cases showing frequent ventricular premature contractions, quinidine was given in the hope it might prevent a serious outcome. One case died suddenly, apparently of cardiac standstill. Two others had fatal pulmonary embolisms and in the others there was no apparent good effect. After this experience the author's opinion is that quinidine is a dangerous drug for coronary disease patients.

Daily blood counts for the first few days serve well to indicate the size and somewhat the outcome of the infarcted area. Sedimentation rates are probably a more accurate guide to the progress towards healing or fatal outcome.

Diet should be limited to liquids for the first few days and should be selected to furnish plenty of carbohydrate. One ounce of Karo corn syrup in lemon juice given every three hours with other liquids at hourly intervals has served well.

SERIAL ELECTROCARDIOGRAMS

Serial electrocardiograms are needed and will aid one in prognosis and help in locating the infarct. Often the first record taken will show no definite change but in a few hours reliable signs of infarction will be shown. It is of especial importance to have chest leads included in the electrocardiogram. Records should be made every few days to demonstrate the characteristic changes that indicate the formation and healing of an infarct. Then too, one learns to depend to some extent upon the cardiographic changes in regulation of treatment.

If the patient is in a hospital certainly no visitors should be allowed except the immediate family and they should be requested not to talk of business matters or any thing

that may worry or disturb the patient. The same rule applies in home treated cases so far as possible.

Nitroglycerin and the nitrites in general which are so effective in angina pectoris are of no value in coronary occlusions. Some authors believe that nitrites will do harm by increasing the size of the infarcted area.

A DANGEROUS DRUG

Digitalis is probably a dangerous drug for acute coronary cases. Experimental studies have indicated that digitalis causes coronary constriction and will retard coronary flow. One case in the author's experience, who was given digitalis to combat auricular fibrillation, died of rupture of the heart through the infarction. Digitalis may or may not have been a factor in this case. At any rate it is best to think of digitalis as of doubtful value and use it only when congestive failure does not improve under other measures.

The mercurial diuretics, mercupurin or salyrgan, are valuable aids in combating pulmonary edema and congestive failure.

The beginning of the second, or period of bed rest will vary with the individual case. Morphine has usually been discontinued and the blood pressure tends to rise from the low reached during shock. The electrocardiogram may indicate beginning healing of the infarct. The second period then starts somewhere from one to two weeks after the occlusion. The most important single therapeutic measure in this period is to see that the patient lies quietly and satisfied in bed for six weeks. Oxygen should be continued over into this period and should be gradually discontinued. Patients with angina of effort and coronary sclerosis have been shown to benefit by daily oxygen inhalation of from one to two hours and it is logical to continue oxygen therapy throughout the six weeks or longer.

The patient will have to be frequently reminded about being careful not to strain at stool or taking any exercise at all since he now will begin to feel there is nothing wrong and have a tendency to discard caution.

Coramine orally throughout the six weeks of bed rest is probably as good or better than aminophyllin as a coronary dilator. Coramine unlike aminophyllin does not upset the digestive tract when used over long periods of time.

Diet during the second period should be gradually increased from liquids to more solid foods, still using a diet rich in carbohydrates, with small meals frequently given.

Blood counts may return to normal long before the sedimentation rate is normal. One should have sedimentation rates frequently made and if the rate is not near normal by the end of the six weeks period then the bed rest should be prolonged until the rate does approach normal.

Alcohol in small amounts for patients who desire it is probably beneficial during the second period. A small drink before the evening meal is often most highly appreciated.

Tobacco should not be used in any form but the discontinuation is often a real problem. Most cardiologists condemn its use. Some individuals are made so miserable without their accustomed smoking that in the author's opinion tobacco in moderation should often be allowed.

Sedatives such as nembutal or bromides should be used to get the required rest. If the patient is on a low salt diet, however, the bromides should not be used.

Electrocardiographic records during the second period are useful as a guide to healing and to show whether a new occlusion has occurred. Often one is confronted with the differential diagnosis between pulmonary embolism and a new coronary occlusion, either of which may occur during the bed rest period.

BED REST IMPORTANT

Treatment during the third period is mostly management after bed rest, provided the patient has made a satisfactory healing of the infarct with a heart muscle that is able to regain normal strength. Doctors in general are prone to neglect this period of treatment. After the patient is out of bed and going about again, the doctor discharges him with

very little, if any, instruction or treatment suggested. These patients are certainly candidates for further coronary occlusions. Time does not permit a detailed description of medical care of these patients. The author read a paper before this society about five years ago entitled, "Attempted Means of Prevention of Coronary Occlusions." In the first few weeks of the third period of treatment most patients will have to be watched closely to prevent an over amount of exercise. Each patient will have to be advised according to his particular reserve power.

TREATMENT FOR CIRCULATION

Aminophyllin if given, is best alternated every few weeks with coramine. Some patients experience effort angina when first starting to walk about and tissue extracts have been injected with some benefit. Radiothermy with the short wave machine has been of benefit also. The theory of heating the deep tissues and thereby improving circulation has not been definitely proven. In actual experience the patients do feel better and can take more exercise without discomfort. The author has recommended courses of diathermy treatments every two or three months in cases where a good collateral circulation has apparently not been established. Since the advent of the new B.L.B. oxygen mask, it has been found of benefit to have certain patients purchase their own oxygen equipment and to take daily inhalation of oxygen for one or two hours.

Patients should be encouraged to take at least two vacations per year. They should be taught to control their weight and not be allowed to become obese. They should be requested to cultivate the habit of not worrying and to go through life a bit more leisurely. Social life should not be allowed to keep them up until all hours of the morning. Regular sleeping and eating hours should be maintained. Outdoor exercise such as walking and even golf in moderation may be allowed. Circulation throughout the coronary system is probably better with moderate exercise that does not bring on dyspnea, pain or undue fatigue. Tobacco should be stopped if possible. When one is dealing with a cooperative patient it is probable that recurrence of coronary accidents may be prevented for long periods of time.

Surgery for the special patients who are unable to establish a satisfactory circulation may be indicated. The Beck operation has supporters as well as the subtotal thyroidectomy operation. The author has not been impressed with the surgical results so far as observed personally.

Careful yearly health examinations should be made and a close watch for focal infections as well as cardiac damage should be advocated.

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Students Mental Health

Mental hygiene for the student is a concept that is gaining increasing encouragement among school teachers and administrators, Charles R. Foster, New Brunswick, N. J., declares in *Hygeia, The Health Magazine* for March.

A study of New Jersey schools, he says, shows that in many communities every step in the educative process, from the selection of teachers and textbooks to the awarding of diplomas at the end, is being examined in the light of its effect on the pupils' mental health.

Commenting on the nature of mental hygiene, Mr. Foster says it is largely preventive. It attempts to keep our minds in health, our emotions under reasonable control, our purposes wholesome and our attitude toward other people free of suspicion, jealousy or other signs of defect.

Mr. Foster mentions the following methods by which mental hygiene may be approached in the schools:

"Constant emphasis, both on the part of the teachers and administrators, on the need for understanding the child before attempting to teach him.

"Constant effort to improve the means of evaluating and reporting on the pupil's work.

"Flexibility in handling children (their assignment to classes, courses and subjects) so that adaptations may be made to suit their needs.

"Changes in the curriculum, so that what the children are studying will have meaning to them."

THE SURGICAL TREATMENT OF PEPTIC ULCER*

By CARRINGTON WILLIAMS, M. D.
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THERE was a time, within the surgical experience of most of us, when the diagnosis of peptic ulcer was considered a sufficient indication for operation and the operation usually done was gastroenterostomy. Such indiscriminate application of this operation resulted not infrequently in a state which was worse for the patient than his ulcer. The failure of this operative procedure led to many secondary operations such as enteroanastamoses for "vicious circles", the taking down of the gastric anastomosis, and for jejunal ulcer. It is not surprising, therefore, that the pendulum soon swung to the other extreme and any operation for ulcer was condemned by the medical man. This was the period when many discussions and arguments of medical versus surgical treatment of peptic ulcer appeared. Fortunately for the patients and the profession, a balance has been reached, so that now the internist and the surgeon are in accord in the vast majority of cases as to what is the proper method of treatment for these cases.

This accord can be summarized in a few words, the treatment of peptic ulcer is a dietary and medical regime in the hands of the internist and surgery is indicated only in cases where complications develop. There is still a sharp difference of opinion as to the type of operation which should be employed, particularly for duodenal ulcer.

This discussion includes both gastric and duodenal ulcer. While they are much alike and the indications for operation are much the same, there are some important differences which should be mentioned at the outset. Ulcer of the stomach is often very difficult to distinguish from cancer of the stomach and where doubt still exists after reasonable delay, operation should be undertaken. I believe that ulcer of the stomach may change from a benign lesion into a malignant one, and I would estimate that about 15 per cent of cancers of the stomach arise on the base of a benign ulcer. This adds to the importance of operation on stomach ulcers as compared to duodenal.

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The complications which may occur in the course of treatment of peptic ulcer that indicate surgical intervention may be considered under four headings as follows:

1. Perforation of the ulcer or continued penetration.
2. Stenosis of the pylorus.
3. Hemorrhage from the ulcer.
4. Repeated failure of medical treatment.

In all of these conditions except actual perforation the application of surgical treatment is predicated on the failure of adequate and complete medical care to give relief, and this treatment should include diet, medication, bed rest, and elimination of associated lesions, particularly foci of infection and other disorders of the gastrointestinal tract. For example, we often see patients who have been treated for long periods by diet and medicine without any attention having been paid to badly infected teeth or tonsils. Infection anywhere in the body, but particularly in the upper digestive and respiratory tracts, may be responsible for the failure of treatment otherwise adequate and for recurrences

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after apparent cure. Notable among other disorders of the gastrointestinal tract which should be eliminated is subacute or chronic appendicitis. At the suggestion of my medical associates I have on a number of occasions removed such appendices without disturbing the ulcer and the result of medical treatment has shown great improvement.

We shall now discuss the indications more in detail and consider the various operative procedures under the four headings mentioned above.

1. ULCER PERFORATION OR CONTINUED PENETRATION

When an ulcer has actually perforated, immediate operation is indicated. Every hour of delay adds to the hazard of the condition and the rising mortality rate in proportion to the time interval between perforation and operation is a spur to prompt action. At operation the most simple procedure consistent with existing conditions should be chosen. Almost without exception simple closure of the perforation, aspiration of free fluid from the cavity and closure without drainage should be done.

As in almost all stomach operations, I prefer an incision in the midline above the umbilicus and to the right of the round ligament of the liver. The perforation is closed with interrupted double mattress sutures and a piece of omentum is fixed over the suture line. Sometimes there is so much induration that the edges of the perforation must be excised. This applies to both stomach and duodenal lesions. Only under the most unusual conditions is gastroenterostomy indicated. Often there may seem to be an inadequate pylorus, but with the subsidence of the inflammation in this area it will become adequately open. Drainage is very rarely indicated; it should be used only where abscess has formed and necrotic tissue is present. When drains are used, they should be placed away from the suture line. These wounds are closed in layers, the peritoneum with chromic catgut, the linea alba with interrupted figure of eight rustless steel wire, and the skin with silk.

When the ulcer is the penetrating type and tends to progress or fails to improve with adequate treatment, operation is indicated. Excision of the ulcer is the operation of choice. In the first part of the duodenum pyloroplasty with excision of the ulcer bearing area may be used; depending on the location of the ulcer, the procedure of Finney, Judd, or Horsley should be chosen. When the ulcer is located on the posterior wall of the duodenum or in the pyloric end of the stomach, resection of the pylorus and part of the duodenum will be necessary. When this is done for duodenal ulcer the defect must be repaired by closure of the duodenum and union of the stomach and jejunum. I prefer the posterior Polya method where the first part of the jejunum is united to the stomach, side to end, through the transverse mesocolon. When it is done for stomach ulcer, I use direct union of stomach and duodenum when this is technically possible, and it is surprising how often it can be done. When the ulcer is located too high in the stomach for resection, local excision and gastroenterostomy are indicated. It may be too low in the duodenum for excision, but then resection of the pylorus and the Polya type of repair puts the ulcer at rest and is, therefore, the procedure of choice.

2. STENOSIS OF THE PYLORUS

The pylorus may become obstructed by spasm of the sphincter muscle, by edema from inflammation, or by cicatrix from an old inflammatory process. The obstruction by spasm responds promptly to belladonna therapy. The obstruction by edema will often subside on medical treatment consisting particularly of rest and gastric lavage or continuous gastric suction. If, however, this condition tends to recur, operation should be done. When the stenosis is due to cicatrix, operation is immediately indicated.

For duodenal ulcer the ideal operation is pyloroplasty, but unfortunately the ulcer and the accompanying inflammation have usually deformed the pylorus to such an extent that it is not technically possible. When the steno-

sis is marked, gastroenterostomy gives excellent results.

There has been in recent years a marked trend away from this operation, particularly in European clinics. I feel that the advantage is the simplicity of performance and the more favorable situation if secondary operation becomes necessary. Its opponents claim that it does not relieve the stomach and that the incidence of ulceration in or near the stoma is high. My experience with it has given excellent results, and I am confident that the incidence of ulceration is very low.

When the ulcer causing the stenosis is on the gastric side of the pylorus, resection of the pyloric portion of the stomach should be done. As indicated before, I prefer to make a direct union between the stomach and the duodenum when it can be done. This restores the parts to their normal relationship and allows the stomach to deliver its contents through the normal channels.

3. HEMORRHAGE FROM THE ULCER

Bleeding may be in small amounts over a long time in spite of treatment and may cause a profound anemia, or it may come suddenly in alarming amounts. The first type can be approached deliberately, resection of the ulcer bearing area by the easiest method is the procedure of choice when medical measures fail.

When the hemorrhage is massive, it demands life saving measures, such as infusions of solutions and transfusions of blood. If it does not recur, a careful medical regime should be followed. In instances, fortunately rare, the hemorrhages may be repeated in rapid succession and the patient soon becomes exsanguinated. This type of emergency is difficult. There has been a widespread opinion that patients do not die from hemorrhage from ulcer; this is a grave mistake, the mortality from massive hemorrhage is quite high. The situation at times is further complicated by the fact that the ulcer may not have been diagnosed before, so that the attending physicians are in doubt as to the cause of the bleeding. In any case, supporting measures alone are indicated after the first hemorrhage. If it does not recur, the diagnosis can be confirmed by x-ray examination in about ten days. If the hemorrhage recurs at relatively short intervals, excision of the ulcer is indicated. When the ulcer is in the stomach, particularly the pyloric portion of the stomach, it is more accessible than when it is located low down on the posterior wall of the duodenum. Operation, therefore, can be undertaken with more positive assurance of removal of the ulcer in stomach cases. The age of the patient also should influence us; elderly individuals are more apt to have hardened arteries which would continue to bleed and should be operated upon more promptly than the young person with elastic vessels.

While massive hemorrhage more often comes from chronic deep ulcers that have eroded a vessel, they may come from superficial rather insignificant lesions. In duodenal ulcer it is not always easy to demonstrate the ulcer because it may be either a superficial one or located low down on the posterior wall. If the diagnosis has been well established, the operation should be done. In general the diagnosis of duodenal ulcer by x-ray examination is more reliable than diagnosis by surgical exploration. At times it is necessary to open the stomach or duodenum to establish the diagnosis. When operation is undertaken for bleeding, the ulcer should be removed. Ulcers located in the pyloric portion of the stomach and on the posterior wall of the upper duodenum are removed by resecting the pyloric portion of the stomach and the upper duodenum. Repair should be done by closure of the duodenum and union between the stomach and the jejunum. Ulcers located too high on the stomach for resection should be excised and gastroenterostomy done. Ulcers on the anterior wall of the first portion of the duodenum may be accessible for excision and pyloroplasty as indicated above for penetrating ulcers.

4. REPEATED FAILURE OF MEDICAL TREATMENT

Operations done on these patients should be undertaken with full knowledge that fail-

ure is more likely than in the other groups and that the percentage of complications will be higher. The principal symptom complained of is pain and the patient may be insistent that measures for relief be attempted. The acid content of the gastric juice is usually high. Operation should be rarely done and only after exhausting all other methods of treatment.

PYLORIC RESECTION

These ulcers are almost always in the duodenum. Gastroenterostomy is of no value here and indeed may make a bad situation worse. Pyloric resection, including the ulcer if possible, is the most logical operation but pyloroplasty when it may properly be applied should be seriously considered. Cannon has advocated resection of the fundus of the stomach by V-shaped incisions on the anterior and posterior walls without disturbing the lesser curvature, for the purpose of removing the maximum number of acid secreting glands. It would seem that this operation has much to commend it, but there have been few reports of its application. The adage, "once an ulcer case, always an ulcer case" may be true for all ulcers; it is particularly applicable to this group.

No discussion of surgery for peptic ulcer should omit consideration of secondary operations. In this field lies the greatest grief for patient and surgeon. First among these should be the surgical relief of failure of the new stoma to function. Regardless of the type of operation if the stomach fails to empty when feeding is begun and the limit of parenteral administration approaches, enterostomy in the upper jejunum should be done. This life saving measure was recommended by Crile many years ago. It is usually easy to do and by introducing adequate amounts and varieties of food through the tube the patient can be restored to good condition. Furthermore, the cause of dysfunction is often edema or inflammation which will gradually subside so that no other procedure is necessary. If it does not, we will have a subject in good condition for operative relief instead of a poor risk for an operation which may be quite formidable.

After gastroenterostomy done for relief of pyloric obstruction, the pylorus may open to such an extent that a large part of the food passes through the normal channel. The ulcer may then become active again and may be the seat of massive hemorrhage. If the stoma is an adequate one and operation is indicated, the pylorus should be resected and both the end of the stomach and the end of the duodenum closed. If for any reason the duodenum cannot be attacked, the two cut edges of the stomach may simply be closed, thereby shunting all the stomach contents through the gastroenterostomy.

When a marginal, gastrojejunal, or jejunal ulcer has formed and failed to respond to treatment or has been the site of repeated hemorrhage, operation is indicated. If feasible, excision of the ulcer should be done. When this ulcer is located in connection with a gastroenterostomy and the pylorus is patent and the original ulcer healed, the gastroenterostomy can be taken down and the two openings closed. However, when the ulcer is extensive, resection of the stomach is necessary. The opening of the jejunum may be closed or the jejunum resected according to the extent of the damage.

These ulcers may perforate and become adherent to or form a fistula into a neighboring loop of bowel. When this occurs into the colon it is a serious complication. To correct this deformity it will almost certainly be necessary to resect the stomach and in addition resection of the colon or jejunum or both may be necessary. It is obviously an operative procedure of the first magnitude.

MASSIVE HEMORRHAGE

Massive hemorrhage may, of course, occur after operation has been done for a primary ulcer. If the original procedure was a gastric resection, the bleeding almost certainly comes from an ulcer at the new stoma. On the other hand if the operation was a gastroenterostomy only, the probability is that the bleeding is from the original ulcer.

X-ray examination may or may not give information of the source of the bleeding because the deformed stomach makes diagnosis difficult; it will, however, reveal the function of the stoma. At the secondary operation careful exploration of the whole field should be made. The operation of choice is resection of the stomach distal to the stoma and the ulcer bearing portion of the duodenum and closure of both ends. Before this is done, however, the stomach should be opened in the line of resection, so that the patency and condition of the stoma may be determined under direct vision. Even though it is not technically possible to remove the duodenal ulcer, the same procedure would be carried out so as to completely short circuit the passage of stomach contents from the area of the ulcer.

POSTOPERATIVE CARE

After operation the patient is sustained by parenteral solutions. If there is any evidence of retention in the stomach, suction through a nasal tube should be used promptly. After a few days, usually four, thin liquids are given in small amounts. If this is well tolerated, a routine Sippy regime is started. The convalescent stage of this diet should be followed for several months and the patient is urged to use dietary discretion always. It is wise to prohibit the use of alcohol and tobacco.

SUMMARY

Operation for peptic ulcer should be undertaken, except in emergency conditions, only after careful medical treatment has been followed for a considerable time. Operation is then indicated almost always for complications of the ulcerative condition. The ideal operation includes removal of the ulcer bearing area, but this is not always possible or advisable. Certain indirect operations are recommended under these circumstances.

The free use of parenteral solutions and when needed, transfusion of blood, keep the patient in good condition after operation.

The convalescent period should be considered long and the patient placed on a medical regime as if for a primary ulcer. He should never forget that he is an ulcer patient.

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Sulfanilamide Derivatives

The care being exercised in determining the merits of two new derivatives of sulfanilamide before they are placed on the market is commended by *The Journal of the American Medical Association* for March 9 in a discussion of a preliminary report on the new compounds by Perrin H. Long, M.D., Baltimore, published in the same issue. *The Journal* says:

"Since the introduction of sulfanilamide into American therapeutics early in 1937 the Council on Pharmacy and Chemistry (of the Association) has followed new developments carefully. Both *The Journal* and the Council on Pharmacy and Chemistry have commented repeatedly on the necessity of careful administration of sulfanilamide and its compounds. The tremendous potentialities of the particular chemical grouping represented in the sulfanilamide compounds have warranted the belief that many new paths of treatment would be opened. Progress has been so rapid that the Council has been obliged to issue four succeeding revisions of its statement of actions and uses for the description of the drug in New and Non-Official Remedies.

"The introduction of sulfanilamide, as was to be expected, was soon followed by the presentation of a derivative representing a combination of pyridine and sulfanilamide, which received the non-proprietary term sulfapyridine. The Council on Pharmacy and Chemistry has also published recently a revised statement of the actions and uses of sulfapyridine, necessitated by the additional knowledge beyond that obtainable in May, 1939, when the product was accepted.

"Now come reports of two more derivatives of sulfanilamide--sulfathiazole and sulfamethylthiazole. All of these sulfanilamide derivatives are quite similar in their basic character.

"It is too early to state definitely just what advantages, if any, these derivatives may have over sulfanilamide and sulfapyridine. One group of workers have stated that sulfamethylthiazole has been found efficient in the treatment of some infections caused by staphylococcus organisms. Investigation of its effectiveness in diseases caused by staphylococci is decidedly in order, for if the product is found to be of value in these diseases it certainly will have advantages over sulfanilamide."

PEPTIC ULCER* *

By M. A. BLANKENHORN, M. D.*
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WITHIN the last quarter century no fundamental fact as to the cause of ulcer has come to light and no new plan of treatment. Meanwhile most of the hotly contested points as to diagnosis and treatment have cooled; the disease is fairly well managed and the doctors no longer have unreconciled views as to how the job is done. This present day accord among doctors as to what to do about ulcer, especially the decisions about when to operate and when not, is due to more careful application of old, rather than to new, ideas. In this symposium I expect to review briefly the accepted medical views, with emphasis on a few that I count important. Some of the points that I may emphasize as important are my favorite notions. They may be peculiar to me and may not be important in textbooks.

First, as to cause of ulcer. Excess acid and spasm are the only important items. What makes this excess of acid and spasm I do not know. Endocrine disorders, especially of the pituitary, and sympathetic nerve imbalance as well, may be important. These are to date matters of physical constitution and may be the underlying cause of acid and spasm, but as yet nothing useful can be done about the constitution insofar as changing it is concerned.

I should not dispose so quickly of constitution and what to do about it, for certainly one can do a lot about adjusting the habits of the ulcer subject to live comfortably with his constitution and perhaps by that arrangement prevent ulcer. The ulcer constitution or habit is mostly one of behavior. It is found in the emotional, worrying individual who rushes his meals, goes long periods of fasting because he cannot take the time, and then forces appetite when it lags by using alcohol or the ketchup bottle. This individual man—four times as common as woman—has a constitution and by-laws of living that go to indigestion and eventually ulcer. He is often seen in milder distress that should not be diagnosed as ulcer, but should be managed like ulcer; if not to cure ulcer, certainly with good chance of preventing it.

The symptoms of ulcer are indigestion, pain and bleeding. There is no rule about the pattern of indigestion that goes with ulcer, except that the indigestion is periodic with long cycles of intermission—such cycles as two to six months of spontaneous relief, alternated with equal periods of distress. This is quite unlike the indigestion of gall-bladder disease, which is intermittent in much shorter periods, i.e., one or two days or weeks rather than months. Ulcer pain is exaggerated indigestion, and like it, it is often periodic in long intervals rather than in short. The relief of pain by eating is to me a good sign of ulcer if I can learn that protein food is usually successful and other foods are not. Protein is the only element of diet that has very much acid-neutralizing effect, for it combines chemically, thus acting as an alkali. Then, there must be enough food eaten to neutralize the acid completely. The same is true of baking soda; a tiny pinch will not neutralize

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**Read before the Chesapeake and Ohio Surgeons Annual Meeting, White Sulphur Springs, October, 1939.

a stomach full of acid, but enough will, and then the symptoms stop—for a while.

Bleeding (tarry stools) is the best single sign of ulcer. Benzidine tests for occult blood in stools are too hard to interpret because the test is too delicate. Guaiac tests are better and may be diagnostic if backed up with a story of ulcer complaint. Recurrent bleeding may be the only sign of relapse or failure to cure and of itself not a dangerous sign. Very few patients bleed fatally, and surgical treatment for hemostasis is not justified generally. There is at present no clear indication to operate for bleeding peptic ulcer to prevent bleeding to death. Studies are now in progress in the Cincinnati General Hospital of patients who do bleed dangerously (some of them fatally) to decide what is the best management. As yet, we have no clear indications about operating. Back pain, when present in addition to typical ulcer pain, is best interpreted as posterior penetration and indicates bed rest until it stops.

LOCAL PERITONITIS

Physical examination of ulcer patients is generally not very informative. Sometimes after severe colic there may be mild muscle spasm even in a shallow ulcer or where there is no ulcer at all. True muscle spasm is a sure sign of local peritonitis and is a sign of deep or penetrating ulcers that have set up local peritonitis at the site of penetration. Muscle spasm is seldom found in shallow ulcers. It is a forewarning of perforation and should put the patient to bed. X-ray with good fluoroscopic examination to show filling defects and increased motility are the next best evidence of ulcer. The hard job, with x-ray, is to decide when deformity of the duodenal cap is due to spasm alone, to obsolete scar alone, or to ulcer. The diagnosis of "active ulcer" can be made inferentially. Repeated examination, together with other studies, may be needed to make an absolutely certain diagnosis.

I have the highest regard for the opinion of a well–trained x–ray man with up–to–date equipment who does his work in intimate association with the clinic. Most of the improvement in the treatment of peptic ulcer in the last 20 years has been due to accurate x-ray diagnosis. By this I mean accurate classification of the lesions as to location, activity, chronicity, or as lesions that have healed entirely.

DIAGNOSIS OF ULCER

Gastric analysis is not needed for the diagnosis of most cases of peptic ulcer. However, the absence of free HCl with the use of histamine should exclude peptic ulcer and raise the question of cancer. The therapeutic procedure of emptying the stomach with a small tube for relief of pain, especially at night, is of great value in treatment. With this performance, one can learn about inadequate or excess alkali dosage and about retention of chyme, so that medication can be regulated better when tubing is practiced in this manner.

As to treatment, the Sippy regime is the best form of medical management, but should never be made a routine. Treatment should be tailor-made to fit each case, on the plan of complete neutralization of free HCl avoiding an excess of alkali. Protein food, such as milk, eggs and meat, are very good anti-acid foods. Small feedings at two-hour intervals are rarely needed beyond the first week. Many patients can be ambulatory throughout and a few can work at hard labor. Bed rest is indicated for large hemorrhage, signs of penetration, and for continued nervous irritability. Three alkali powders of Sippy are best; some of the newer forms of non-absorbable alkalies and colloidal anti-acids which take out acid by adsorption may be useful, but in my experience, none of them have displaced the Sippy powders in the affections of the several visiting doctors. Belladonna for continued spasm, as indicated by persistent pain, is a good adjuvant to proper alkali medication. Tincture of belladonna, in drops, or atropine tablets are both very convenient and useful. Sodium nitrite is another good adjuvant when belladonna is not enough to overcome such spasm.

An essential part of the Sippy regime is complete comfort. If the patient complains, he is not right; he should be neither hungry nor full, but just right. Vitamin C should be used where milk has been the main diet over one month, for milk is very low in vitamin C.

Indications for surgical treatment are:

(a) Where cancer might be the right diagnosis and ulcer the wrong, i.e., a large gastric ulcer, absence of free HCl, a gastroscopic view peculiar to cancer.

(b) In uncontrollable severe pain in pyloric or duodenal ulcer.

(c) In organic pyloric obstruction, i.e., not spasm or transient edema.

(d) After failure of medical cure, as shown by:

(1) Relapse.
(2) Repeated hemorrhage.
(3) Unmanageable pain for six months.

My associate, Dr. Schiff, who has charge of the gastric clinic in the Cincinnati General Hospital and who is now my advisor in his specialty, says that about one-fourth of all our hospital patients with duodenal ulcer eventually require operation; of patients with gastric ulcer, a much smaller percentage. In gastric ulcer, he is greatly aided in management by the use of the flexible gastroscope. By its use, he can decide when healing is complete, and when cancer is seriously considered.

In addition to these generalities, there are a few industrial implications which I think important. First of all, the relation of trauma to peptic ulcer is very remote; probably trauma is never the cause of anything more troublesome than mucous membrane erosions which bleed shortly after trauma to the abdomen and then heal up promptly.

Trauma or even hard work are rarely associated with a perforation. A few years ago, one of my associates in Cleveland, Dr. A. J. Beams, studied our material and read his report before the section on industrial medicine of the state association. His conclusions were that work and trauma were not the cause of perforation.

The treatment of peptic ulcer does not always require bed rest nor even stopping work. Treatment can be adapted to a variety of circumstances if the patient can be kept comfortable.

The indications for bed rest are x-ray evidence of penetration, severe and persistent back pain, hemorrhage, and spasm of the abdominal muscles.

Outlook for Schizophrenia

The outlook for schizophrenia, a mental disease characterized by cleavage of mental function, is not so hopeless as is generally believed, Raymond L. Osborne, M.D., Hartford, Conn., states in *The Journal of the American Medical Association* for March 9. He points out, by way of illustration, that 44 per cent of a group of 339 hospitalized patients obtained relief or remission without treatment by drugs and were able to return to their homes.

For simple schizophrenia the outlook is best, Dr. Osborne says. There is a relatively good outlook for the first attack but a poor one for subsequent episodes in patients with the catatonic type, which passes from melancholia to mania and thence to dementia and physical decay. Patients with the chronic, slowly progressive type known as paranoia, which is characterized by the presence of systematized delusions built up in a logical form, have a fair outlook, which is not influenced by previous hospitalization. The least chance for relief is predicted for those with the hebephrenic type, which has its onset soon after puberty and is marked by rapid deterioration, hallucinations, absurd delusions, senseless laughter and silly mannerisms.

The oldest group in Dr. Osborne's series was the paranoid, with an average age of 33.5 years at admission, and the youngest the hebephrenic type, averaging 25.6 years.

"Although the results reported with pharmacologic shock treatment (injection of drugs to produce convulsive shock) are, so far, decidedly favorable, especially as far as it seems to cut down the length of hospital stay before remission in early cases, psychologic implications must not be overlooked," the author says. "The intensified relation of patient to physician and added nursing care may be factors in rapid remission."

PHYSICAL DEFECTS OF SCHOOL CHILDREN IN CERTAIN AREAS OF LOGAN COUNTY

By B. D. SMITH, M. D.*
Omar, West Virginia

THE purpose of this article is to call attention to the effort that is being made along the lines of public health work by some of the coal companies of Logan county. Community and public health work by the larger coal companies and other industries is certainly not new, but it is comparatively new on a large scale to Logan county. Most of the coal company employees of Logan county pay a regular fee checked over the payroll for the doctors services and medical supplies, and a separate fee also checked over the payroll for hospital services. The services given to the employees of this coal company of a public health nature include: (1) Physical examination and immunization of all the school children, with records kept of each child; the record follows the child on through all the grades. All defects found are corrected when advisable and possible. (2) During the summer months the babies and preschool children are given physical examinations, immunizations, corrections and treatments at the "baby clinics" held at the different doctors' offices, at certain hours each week. To stimulate interest in these clinics at the end of the summer season a "healthy baby contest" is held and first and second prize winners for both colored and white, selected from a health standpoint. (3) Sanitary surveys of all dwellings and lots on the properties of the company are made each summer. A record is kept of each house, and any unsanitary conditions corrected when possible. (4) Prenatal care with monthly checkups for expectant mothers. (5) Blood test for syphilis as part of the physical examination of all new employees or old employees reexamined. When the blood test is positive the employees are not refused employment or discharged, but are required to take treatment. (6) Every effort is made to have the adults immunized against smallpox and typhoid. The children are immunized at school.

*Medical director of West Virginia Coal and Coke Corporation.

THE AUTHOR

Dr. Smith, graduate University of Maryland School of Medicine; postgraduate, University of Bordeaux, France; Medical Director West Virginia Coal and Coke Corp; Captain Medical Corps, U. S. A., Mexican Border and A. E. F., 1916 to 1918.

This article will deal principally with an analysis of this term's school examinations just completed, of the 1,351 pupils of the ten schools on the Logan county properties of the company.

All of the 1,351 pupils have been immunized against diphtheria and smallpox, and 98 per cent against typhoid.

The following is a table of defects found, the degree of defects shown by the number of X marks.

	XXX Immediate correction advised	216
	XX Correction advised	323
Underweight:	X Slightly below average	250
	Total underweight (out of 1,351 examined)	789

Note: Twenty-five cases were found from 10 to 20 pounds overweight. XXX from 10 to 25 pounds underweight; XX from five to ten pounds; X less than five pounds.

In most of the cases of underweight, no definite pathology could be found. The parents did not know of the underweight or attached no importance to it until it was reported to them. The children were allowed to eat candy and almost anything between meals, which would interfere with their eating of the proper food at meals. In many cases the proper food was not provided, either through poverty or negligence. At some of the schools lunches were provided. Where physical defects were found the remedy was sought. The children are reweighed at fre-

quent intervals and they usually gain weight rapidly.

Tonsils:	XXX Should be removed	415
	XX Advise frequent observation, probable removal	260
	X Slightly infected, advise observation	25
	Out of 1,351 examined, total infected tonsils	700
Ears:	X Acute otitis media	9
	XX Acute otitis media	9
	Total acute	18
	X Chronic otitis media, inactive for a year or more	76
	XX Chronic otitis media, inactive for three months	100
	XXX Chronic otitis media, one or both ears running now	20
	Total	196
	X Cerumen	37
	XX Cerumen	21
	Total	58
Hearing:	X Defective	7
	XX Defective	4
	XXX Defective	1
	Total defective hearing	12
History of Slight Rheumatism:	X History of slight rheumatism in legs	48
Heart:	XX Tachycardia	8
	X Slight reduplication at apex beat	4
	X Roughening of first sound at apex	4
	XX Irregularity (extrasystole)	2
	XX Forceful first sound of heart	1
	X Slight systolic murmur over mitral area not transmitted	5
	XXX Presystolic over mitral	1
	XX Systolic murmur over mitral area not transmitted	10
	XXX Systolic over mitral area, and transmitted to axilla	5
	XXX Much enlarged heart	1
	Total	41

Note: Some slight defects of heart noticed at the examinations, were found to be due to the excitement of the examination and later found to be normal, and eliminated from the record.

The tonsils, ears, history of slight rheumatism and heart are charted together here because of the frequent connection in childhood.

The tonsils marked XXX and most of those marked XX were badly infected and give history of several attacks of acute tonsillitis. These will be removed as fast as operating facilities and securing of parents consent will permit. Eighteen cases of acute otitis media were found. Bad colds were very prevalent at the time of the examinations. There were twenty cases that had one or both ears discharging at time of examination. One hundred others have history of several attacks of running or very painful ears but not active at time of examination. Most of these cases showed a connection between infected tonsils and infected ears, a few were improved by removal of tonsils, others were not improved.

Fifty-eight had wax or a mixture of wax and coal dust. In a few instances this formed a very hard mass, difficult to syringe out, and completely closing the ear canal.

The defective hearing was found generally in the old discharging ear and old mastoid cases. When the tonsils have not been removed this will be advised, but most of them had already had this done and the ear specialist advised that nothing else could be done about it.

Forty-eight gave histories of slight rheumatism in the legs or excessive soreness in the legs after slight exercise. This history was sought for because of possible association with tonsils, ears and heart conditions.

The hearts showed various abnormalities that were very difficult to evaluate. There were definite abnormal sounds, but no clinical evidence of heart disease, except in a few instances. There were other cases that showed slight murmurs or rapid hearts during the excitement of the examination that appeared normal at a later date. Some of these hearts that show some abnormality in sound or rhythm may at some future date show definite heart diseases, therefore, every effort is being made to clear up any source of infection. Some of these cases had infected tonsils and history of slight rheumatism; others did not.

Teeth:	X Malocclusion	3
	XX Malocclusion	13
	XXX Malocclusion	17
	Total	33
	X Discolored enamel (various colors)	10
	XX Discolored enamel	9
	XXX Discolored enamel	4
	Total	23
	X Caries	110
	XX Caries	234
	XXX Caries	263
	Total	607

Very few people realize the very serious condition of the teeth of our school children, especially in the coal fields and probably other industrial areas. This condition is found not only in the temporary teeth of younger children, but also in the permanent teeth of older ones.

The malocclusion cases include crowding of the incisors with resulting malposition, prominent upper incisors and probably disfiguring canines. Often there are actual serious deformities with great projecting canines like tusks, or roots of teeth projecting from the upper part of the gums like a spear and cutting the mucus membrane of the jaw. One child had a horn-like tooth projecting downward from the roof of the mouth nearly one-fourth of an inch behind the incisors.

Children with such ugly and deformed teeth very often develop an inferiority complex.

Twenty-three cases had various shades of discolored enamel. Practically all of the children had some carious teeth, very few had been filled. About one-fifth of all children examined had very bad caries of several or most of their teeth. Some teeth were badly infected with pus coming from the side of the gum at time of examination. There is still uncertainty among the doctors and also dentists in this area as to the proper procedure to be followed in infected and carious temporary teeth.

The local dentist rechecks the teeth of all the pupils and makes the decisions as to what dental work should be done.

Eyes:	XX Acute conjunctivitis at time of examination	2
	X Acute conjunctivitis at time of examination	2
	Total	4
	X Strabismus	3
	XX Strabismus	4
	XXX Strabismus	4
	Total	11
	XXX Traumatic keratitis	2
	XX Traumatic keratitis	1
	Total	3
	X Lagophthalmos	1
Eyes:	X Granulated lids	3
	XX Granulated lids	1
	Total	4
Vision:	Vision 20/30 in one eye	35
	Vision 20/30 in both eyes	68
	Vision 20/40 in one eye	18
	Vision 20/40 in both eyes	11
	Vision 20/50 in one eye	6
	Vision 20/50 in both eyes	5
	Vision 20/70 in one eye	5
	Vision 20/70 in both eyes	3
	Total defective vision	151

Note: Where the pupil had glasses the test was made with the glasses on.

The eleven cases of strabismus were of several years standing in the older children, but there were a few younger ones that held out some hope for cure. They will be advised by an eye specialist. There seems to be a reluctance on the part of the parents and also the doctors in this area to operate on these cases, even when there would be good chances for success; at any rate very young children with squint are seen, some too young for school, on whom no attempt has been made to correct the defect, either by operation or glasses.

The four cases of granulated lids have been under treatment by the eye specialist, and appear to be under control.

There were a total of 151 with defective vision. A few of these had glasses that were fitted within the last year but the vision was not improved by the glasses or in some cases the vision was much better without the glasses; the main reason apparently for wearing them was to get their money's worth out of the glasses. In some instances they were proud of their glasses. These children were not properly fitted and the glasses not properly checked after the child began to wear them.

There are still great numbers of these school children that need properly fitted glasses to carry on their school work. The coal company does not buy the glasses for them, but collects the amount for the glasses over the payroll for the eye specialist.

Tongue:	Lined and disfigured tongue	3
Gums:	Abscessed (from abscess tooth) and inflamed around bad teeth	50
Rhinitis:	X Rhinitis with discharge	9
	XX Rhinitis with discharge	3
	Total rhinitis at time of examination	12
Nasal Obstruction:	Nasal obstruction	6
Thyroid:	Enlargement of thyroid glands	3
Speech:	XX Defects in speech	2
Nervous:	Excessively nervous	2
Personal Hygiene:	X	65
	XX	42
	XXX	5
	Total	112

Three children had badly disfigured beefy tongues, with cracks and lines. The examiner experiences quite a surprise when the child opens its mouth and in one so young appears a tongue that should belong to a much older person that has lived unwisely.

The twelve cases of rhinitis were either acute or acute exacerbations of chronic rhinitis all having a purulent discharge at time of examination.

The three cases of slightly enlarged thyroid glands presented no symptoms.

The two cases showing marked defects in speech and two others showing such extreme nervousness at all times will require considerable study.

By personal hygiene is meant the state of cleanliness of the body and clothes at the time of the examination. This is a variable thing, because of the fact that if the pupils had an idea when the examination was going to take place they would clean up for it. The number of X marks gives some idea of the degree of uncleanliness.

Lungs:	X Rales, scattered at time of examination	14
	XX Rales, scattered at time of examination	25
	XXX Rales, scattered at time of examination	2
	Total	41
	X Asthma	1
	XX Asthma	3
	Total	4

Most of the forty-one cases showing râles in chest at time of examination had acute colds and were normal later upon recheck.

The four asthma cases have frequent attacks and upon examination the chest shows the typical asthma chest.

Glands In Neck:	X Enlarged glands of neck	82
	XX Enlarged glands of neck	50
	XXX Enlarged glands of neck	1
	Total	133
Posture:	Lordosis, usually with some protrusion of abdomen	16
	More marked in younger children, and under-nourished.	
	Old injury to spine with deformity	1
	Tuberculosis of spine, arrested	1
Bones:	Tuberculosis of femur—and pelvic bones	1
	Old injury of bones with deformity	2
	Deformity of chest	2
Skin:	Impetigo	34
	Ring worm of body	4
	Scabies	3
	Boils	1
	Badly disfiguring burn scars	4

There was a slight enlargement of glands of the neck in practically every case examined. The 133 listed showed distinct enlargement, the degree shown by the X marks. Infection of teeth or tonsils at some time probably accounts for the great number of these. Examinations of inguinal glands was not made on the girls, the boys usually had a few small ones, a few had large ones caused by the impetigo on the legs at the time.

Hernia:	X Umbilical	22
	XX Umbilical	6
	X Inguinal one side	3
	XX Inguinal one side	4
	XXX Inguinal one side (two of these going into scrotum)	4
	X Ventral	2
	X Open rings	5
Miscellaneous:	Cryptorchidism	3
	Varicocele	1

Of the umbilical hernias twenty-two were small and it is safe to wait until they cause trouble. Six were fairly large and should be corrected by operation.

At least eight of the eleven inguinal hernias should be operated upon. There were two very small ventral hernias half way between the umbilicus and the sternum. Five had rings open enough to make potential hernias.

Three cases of cryptorchidism were found, none having had treatment of any kind.

SUMMARY

Several coal companies of Logan county are paying more attention to preventative medicine and public health projects to safeguard their employees and their families health.

When this work was first started the employees were indifferent, even antagonistic in some cases, particularly about immunization. Now they are very enthusiastic about the work, and are very anxious to get every defect remedied.

The school teachers have been very active; a great help in arousing the interest of the pupils and parents.

The Logan county health office has been must interested in the work and very cooperative.

At the present time we are not in a position to carry out mass tuberculin testing with x-rays of positive reactors. The test is at present used only on actual contacts or other very suggestive cases.

The population of this section is very shifting, changing employment often, which tends to upset the program. Often before we can accomplish much the child has moved away.

A REPORT OF A CASE OF HEMORRHAGIC PURPURA DUE TO SULFAPYRIDINE

By CHAS. A. HOFFMAN, M. D.
Huntington, West Virginia

During the recent outburst of enthusiasm with the discovery of the remarkable therapeutic value of sulfapyridine, there have been many articles printed on the toxicity of the drug, but I would like to present a report of a case in which the manifestations of toxicity are unlike any of the many case reports that have been published.

Mr. Z., a fifty-seven year old white male was admitted to the C. & O. Hospital in Huntington, West Virginia, on November 28, 1939, with the chief complaint of acute retention of urine. His past history was negative except for gonorrhea thirty-five years ago. He admitted that during the past year he had had several attacks of dysuria which would last a few days and subside, and during the past month, he complained of nocturia two to three times a night. There was no history of "stream difficulties" until two days prior to admission when on arising he had difficulty in micturition, and only after straining was he able to pass a few ounces of cloudy urine. During that day he continued to dribble and every hour or so would strain to pass a small amount of urine. During the day he began to suffer marked burning on urination which was accompanied with a soreness of the glans penis.

These symptoms became progressively more marked until six hours to admission when he developed a complete urinary retention and came to the hospital.

THE AUTHOR

Dr. Hoffman, graduated University of Cincinnati School of Medicine; interned C. & O. Hospital, Huntington; Urologist.

On admission, our first thought was to relieve his pain, so a retention catheter was inserted, and sixteen ounces of cloudy residual urine was released. An examination of the external genitalia at this time revealed an inflamed urethral orifice and a slight yellowish purulent urethral discharge. A gram stain of this discharge was reported by the laboratory as being negative for gonococci.

Examination revealed negative findings except for marked dental caries and fixed pupils. His reflexes were normal, and he had a negative Romberg.

After four days of urinary drainage, he was cystoscoped under spinal anesthesia, at which time spinal fluid was sent to the laboratory. The cystoscopic examination revealed a moderate amount of bladder trabeculation and a "ball valve", hypertrophy of the median lobe of the prostate, with only slight hypertrophy of the laterals.

We did not believe that there was sufficient prostatic hypertrophy to account for the urinary

retention, but even in view of the spinal fluid which was reported as Wassermann four plus, and a tabetic colloidal gold curve, we decided to remove the obstructing portion of the prostate by transurethral resection which was done on December 14, 1939. His N P N was 40.1 mg. per cent with a fair kidney function. At the same time he was given two cc. of lodobismotol intramuscularly every five days.

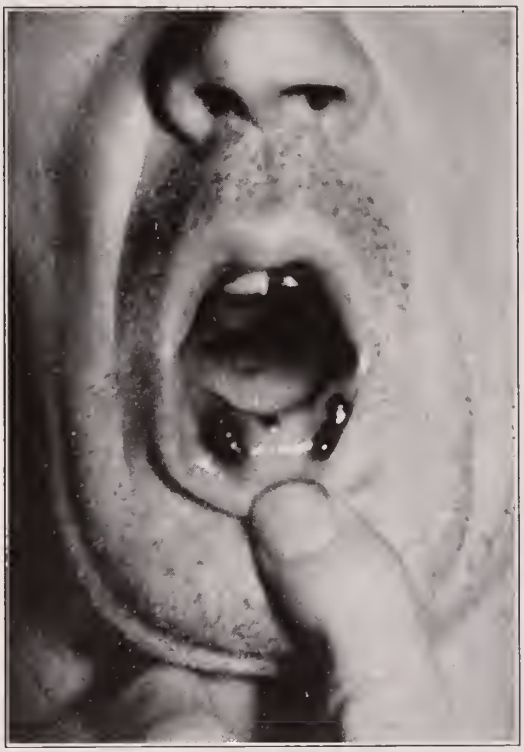

Fig. 1: Hemorrhagic areas on the inner mucous membrane of the lower lip.

The past operative course was uneventful until two weeks postoperatively, when we again did a gram stain on the urethral smear which had persisted. Before this time we had considered the urethral discharge as a result of urethral irritation due to the catheter. This smear was reported as being positive for gonorrhea and he was placed on sixty grains of sulfapyridine a day in fifteen grain does. Twenty-four hours later his discharge had subsided, and he apparently had not suffered any toxic symptoms. The drug was continued.

The following day, he became slightly nauseated and his urine became grossly bloody. This was followed in a few hours by marked bleeding along the entire gum margin. Several of the urinalyses prior to the taking of sulfapyridine showed a faint trace of albumin, but with the onset of these toxic symptoms, the urine contained four plus albumin, with many hyaline casts.

The drug was immediately discontinued and the patient put at bed rest. The bleeding of the gums became progressively more marked, and twenty-four hours later, two hemorrhagic raised areas, approximately one-half centimeter in diameter, appeared in the inner mucous membrane of the lower lip. (Fig. 1) These areas bled profusely. Accompanying this hemorrhagic eruption, a macular hemorrhagic rash covered the entire lower extremities coalescing into a diffuse erythema over the ankles and the feet and was of a purplish hue. There was a moderate non-pitting edema of the feet and ankles, and there was gross blood in the stools at this time. The coagulation and bleeding time of the blood was ordered at this time, but was, apparently overlooked by the laboratory. His red cell count, which on admission was 3,680,000, was found to be 2,950,000 with a slight hypochromia; the white cell count and N P N were normal. At this time the medical service ordered calcium gluconate, grains XV every four hours, and a high vitamin therapy, and intramuscular injections of liver extract daily.

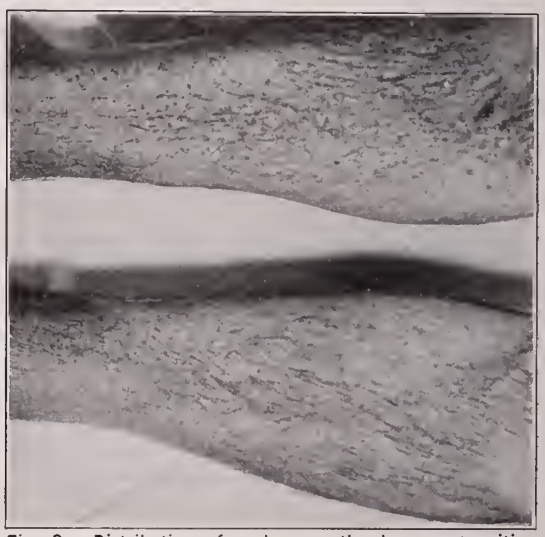

Fig. 2: Distribution of rash over the lower extremities.

Following this therapy there was a gradual diminution of signs and symptoms, and by the sixth day, his urine was free of red blood cells, and all signs of bleeding had subsided. The rash at this time was confined to a bluish tint of the feet with slight edema, which had completely subsided ten days after onset.

His chief complaint at this time, was of generalized weakness, but when he was discharged on

February 3, 1940, all signs and symptoms had apparently subsided.

There is no doubt that several factors must be taken into consideration before one can place the blame entirely on sulfapyridine. Could it be possible that sulfapyridine and iodobismotol were so markedly antagonistic that such a reaction could take place, or should we consider the possibility of some vitamin deficiency such as scurvy? Certainly, we did not think it advisable to renew the sulfapyridine in the absence of bismuth therapy to prove our point.

The fact that the sudden onset of toxicity developed forty-eight hours after the first dose of the drug was taken and subsided so dramatically with its withdrawal, is, I believe, sufficient evidence to prove that we were dealing with a case of toxicity resulting from sulfapyridine therapy. His presence in the hospital, with a full diet for several weeks, prior to the onset of symptoms, should discount the theory of vitamin deficiency.

I think that all of us who are using sulfapyridine as one of our accepted therapeutic weapons of great merit, are being impressed with the caution which we must exercise in its use, and that it should only be prescribed in those cases in which its value overshadows its potential dangers.

Professional Building.

PREOPERATIVE AND POSTOPERATIVE TREATMENT FROM THE ANESTHETIST'S VIEWPOINT*

By ELDON B. TUCKER, M. D.
Morgantown, West Virginia

THIS paper is being presented from the viewpoint of the anesthetist, the medical anesthetist. The anesthetist is one of the most interested parties in the favorable recovery of the operative patient. The anesthetist is in reality the first assistant on the surgical team. He assumes much more responsibility than the surgeon's surgical assistant. This relationship requires very close cooperation between the interested parties. Both parties should feel free to speak their own opinions. If the surgeon has rather definite ideas about the type of anesthesia to be employed or if he should decide to do an emergency operation at some inopportune hour, he should so express his ideas and intentions. On the other hand, the anesthetist will have rather definite ideas about the anesthesia to be employed. If the surgeon is wrong in his selection or asks for some agent which the anesthetist does not feel qualified to administer, or which is definitely contraindicated, the anesthetist should explain this to the surgeon. On the other hand, if there is no definite contraindication for following the surgeon's suggestions, they should be followed. If the anesthetist believes that the anesthetic risk is too serious, he should advise against the operation. The operation may often be delayed a few hours or a few days, the operative risk improving materially during this waiting interval.

THE AUTHOR

Dr. Tucker, graduate University of Cincinnati; interned Chester Hospital, Chester, Pa.; anesthetist, Monongalia General Hospital and City Hospital, Morgantown; member American Society of Anesthetists; president Southern Association of Anesthetists, 1936.

All surgical patients should be examined by the anesthetist. All major operative patients should be examined the day preceding the operation, which is usually the day of admission to the hospital. If this is not possible, the patient should be examined immediately preceding the operation. This

*Read before the Central West Virginia Medical Society at Buckhannon on November 17, 1939.

should include a history of cold or cough, examination of the heart and lungs, taking of the blood pressure, and an inspection of the laboratory findings and the temperature chart. Much may depend upon this preliminary examination by the anesthetist even though it is made at the eleventh hour. A complete change may be made in the anesthesia procedure. Occasionally the findings may justify a delay in the operation. The patient's likes or dislikes concerning the anesthesia will be obtained. If he has any particular aversion to one form of anesthesia, it may be better to accede to his wishes. The battle over the induction of the anesthesia is practically assured if you have the confidence of the patient.

EVALUATION OF THE RISK

This can not be made without a physical examination and proper laboratory tests. Patients are classified as follows according to the degree of surgical risk:

First: The patient is in good physical condition, the operation a minor surgical operation.

Second: The patient is in good physical condition, the operation is a serious surgical operation, or the reverse of this statement; the patient is in poor physical condition, the operation is a minor surgical operation.

Third: The patient is in poor physical condition, the operation is a serious surgical operation.

SELECTION OF THE ANESTHETIC

After making the physical examination, making an evaluation of the surgical risk, knowing the type of operation contemplated, and knowing the capabilities of the surgeon, we are now ready to select the anesthetic agent. Often this ideal plan of procedure is impossible and the selection of the anesthetic is made after obtaining the patient's description from the head nurse. Now one surgeon may require much more relaxation than another, one surgeon may operate much more rapidly than another, therefore consideration must be given to these facts. The site of the operation is often a major factor in the selection of the anesthetic agent. This selection must be made with the patient being given the major consideration. His wishes should not be absolutely catered to if there are definite reasons for not doing so. When a general anesthesia is to be the procedure of choice, the timing of the operation is not so important as when a spinal or an intravenous anesthesia is to be employed. Yet time is a factor to be considered in general anesthesia. Many believe that postoperative shock and morbidity mount almost in proportion to the amount of excess operative time. It is generally believed that the anesthetic agent selected should be that best suited to the patient. No definite routine should be followed and no one agent employed to the exclusion of agents which might be better adapted for this or that case. The agent selected should be one which will produce the desired degree of relaxation, will last a sufficient length of time, and will produce a minimum degree of shock.

PREMEDICATION

A volume could be written on this subject. It goes without saying that the premedication should be selected by the anesthetist. He is more interested in the premedication and the results obtained by the premedication than anyone else on the surgical team. The proper amount of, selection of, and timing of the medication may make or break a good anesthesia. Each patient is an entity. Each patient must be individualized. No set routines should be followed. Standards may be set up and certain rules followed. We will mention some of the premedication drugs employed along with some indications and contraindications for their use.

Morphine is still the most widely used premedication agent. It is used for patients of all ages, except very small children. It is used in variable amounts, dependent upon the age, weight, and nervousness of the patient, the anesthetic agent to be employed and the operation contemplated. For example, the same patient being operated on under cyclopropane should be given a much smaller

dose of morphine than if nitrous oxide were the anesthetic agent. The healthy young adult or the nervous hyperthyroid patient requires a much larger amount of morphine than the aged or the debilitated.

Atropine sulphate has been used almost routinely by many when morphine is used as premedication. Atropine is used where ether is to be the anesthetic agent, with or without morphine. Often if respiratory embarrassment is anticipated it is better to use the atropine alone. If open drop ether is to be used, atropine is given routinely in all cases except tonsillectomies. It is used by many for this operation. We believe it may be used to advantage with small doses of morphine if the closed method or carbon dioxide technique of anesthesia is to be employed and any ether is to be used.

Hyoscine or scopolamine is used whenever gas anesthesia is contemplated. It may be given with morphine. It may be given in small doses for twilight sleep. However, this has been largely discontinued. This drug has a tendency to increase the effect of the morphine. Atropine tends to counteract the depressing affect of morphine. When gas anesthesia is used, morphine and hyoscine are premedication agents of first choice.

BARBITAL DERIVATIVES

Barbital derivatives are used extensively as premedication agents. They are used the night preceding the operation and they are used before all spinal anesthesia operations and before most local anesthesia. They may be used to produce a semi-comatose patient preceding any operation. Nembutal and seconal are two of the commonly used agents.

Codeine may be used in small children in place of morphine; pantopon or dilaudid hydrochloride may be tried if the patient has an idiosyncrasy toward morphine. Avertin may be used as a basal anesthesia or as a premedication.

Ephedrine or neosynephrine hydrochloride are used as a premedication preceding spinal anesthesia.

Under premedication many other drugs might be discussed. Digitalis may be used to advantage in selected cases. Saline and dextrose solutions may be classed as premedication if they are used just before an operation. The transfusion of blood may also be classified under this heading. The premedication should be selected according to the needs or the requirements of the patient and nothing should be left undone in the way of preoperative therapy.

THE OPERATION

The continuation of preanesthetic medication or the beginning of postoperative treatment may be started during the course of the operation. Morphine may be given near the end of a gas anesthesia in order to prevent a too violent recovery. Atropine may be repeated if there is excess accumulation of mucus and saliva. Morphine may be given to the restless spinal anesthesia patient. Intravenous fluids, normal saline or five or ten per cent dextrose, may be given as a preventative or in the treatment of shock. Blood by the citrate method may be administered during the operation on the anemic or poor risk patient. Oxygen may be given the spinal anesthesia patient either by the continuous flow nasal catheter, the face mask, or the nasal mask. We often use the nasal mask. If the above precautions are taken, it will rarely be necessary to use other medication during the operative procedure. However, if the occasion should arise, the following drugs should be at hand for immediate use: metrazol, ephedrine, caffeine, sodium benzoate, coramine, adrenalin. Ephedrine in small doses and metrazol may be given intravenously if there is urgent need for a cardiac or respiratory stimulant. A good way to give these drugs is to inject them through the rubber tubing through which intravenous fluid is being injected.

During the operation other procedures are followed which have a bearing on the postoperative care of the patient. A free and open airway should be maintained throughout the operation. Nasal tubes, metal or hard rubber airways, endotracheal or intratracheal tubes

may be required. Aspiration with the suction pump of mucus and vomitus during the operation, or at the end of the operation, may be a life-saving procedure. The lowering of the patient's head until suction can be obtained is often of immense value. The immediate removal of the vomitus in the emergency operative case is very important. The probable aspiration of vomitus is one of the valid arguments against so many emergency operations. Adjustments of the patient's position during the operation are made by the anesthetist and noted on the anesthesia chart. If there is much fall in blood pressure, the head is lowered 10 to 15 degrees. The spinal anesthesia patient is usually kept with the head down. The patient who has had a kidney operation or a mastoid operation is kept on one side during the operation. On return to the room they should be turned to the opposite side. A gas machine which can be used to give oxygen or to give artificial respiration should be handy in every operating room and the anesthetist should be familiar with the use of such apparatus. Emergencies in the operating room are rare, but teamwork should be developed to take care of these emergencies at a moment's notice. The efficiency of the operating room force is measured by the ability to care for emergencies.

POSTOPERATIVE TREATMENT

The postoperative orders are either written by the operating surgeon or are dictated by him to the anesthetist. The postoperative treatment begins at the end of the operation. The patient has usually been revived as much as possible with oxygen or carbon dioxide and oxygen by the time the operation ends. The pharynx is aspirated. If there is any question about respiratory obstructions some type of airway, nasal or mouth airway, is left in place. If spinal anesthesia has been employed, the foot of the carrier is elevated for the return trip to the room. The tonsillectomy patient may be turned over on his face when placed on the carrier. Patients are strapped to the carrier to avoid difficulties in transportation. In the bed the knees are usually elevated.

If there is any evidence of shock, the bed is placed in the shock position, foot of bed about one foot higher than the head. Tonsil and teeth extraction patients are turned face down. Spinal anesthesia cases are kept with the head down for from six to twelve hours unless there are reasons for elevating the head earlier, such as generalized peritonitis or perforated ulcer. Patients who have been on one side for one or two hours during the operation are placed on the opposite side when returned to bed. Patients are turned hourly from side to side. Patients are encouraged to exercise their legs. Peritonitis, appendiceal abscess, and pelvic peritonitis patients, are placed in a high Fowler's position as early as possible. Patients to get any good from being placed in this position should be constantly kept head up high and knees up high. They should not be lowered for the bath or for changing the bed. There is less indication for turning the patient if he is placed in a high Fowler's position. However, he can be half way turned and a pillow placed behind the back while in this position. This frequent changing of position will greatly diminish the postoperative chest complications. The exercise of the legs should diminish blood stasis in the dependent parts and thus help eliminate postoperative emboli.

MORPHINE SULPHATE

Patients should be kept comfortable following an operation. This is usually accomplished by the use of morphine sulphate, the usual dosage being one-sixth to one-quarter of a grain, given subcutaneously. The amount varies according to the size, age, physique, and nervous excitability of the patient. We would prefer the smaller dosage, repeated more frequently, than the larger dosage which usually keeps the patient quiet a long time. The small child is not given morphine. If a narcotic is required, codeine is given. The child that weighs 80 to 90 pounds, who is having severe pain, may be given one-twelfth to one eighth grain of morphine. Children smaller than that are given one-quarter grain of codeine. The male adult will require mor-

phine in quarter grain dosage. The aged should be given one-eighth to one-sixth grain of morphine or one-half grain doses of codeine. Pantopon or codeine may be substituted for morphine if there is an idiosyncrasy toward morphine. Nembutal by mouth or by rectal suppositories will also help to keep the nervous patient under control. This drug will often cut down the necessity for more morphine.

FLUIDS ALLOWED

Fluids are given freely following operations, usually subcutaneously or intravenously. Fluids by mouth or cracked ice are allowed as soon as nausea ceases. If there is much or prolonged nausea, the patient may wash out his own stomach with a large amount of sodium bicarbonate water. These fluids should be restricted for a few hours. The intravenous route of administration has many advantages. The preparations of dextrose which are on the market rarely produce a reaction. The five per cent solution is the most commonly used. This is made up in normal saline and when given intravenously there is no local reaction such as frequently follows the subcutaneous injection of normal saline. From two to five quarts of fluid may be injected daily by the combination of these two methods. Usually one, two, and rarely three quarts are required, the larger amount being given during the first twenty-four hours following the operation. It is better to give the fluid at regular stated intervals than to give too much, too rapidly and too close together. The same types of fluid may be given per rectum by proctoclysis or by retention enemas. Blood by the direct or the citrate method should be given if there is pronounced shock, if anemia is marked, or if the patient does not respond to the other intravenous therapy. After the first twenty-four hours postoperatively, the patient should be able to take fluids in fair amounts by mouth. If this is not possible, then the other methods should be followed. The more acutely ill the patient, the higher the fever, the more fluid is required.

Stimulants are rarely required postoperatively if sufficient fluid is given. Caffeine and ephedrine are used as frequently as any stimulants. Camphor in oil, adrenalin, digitalis, coramine, and metrazol are occasionally used. However, these drugs will have no lasting effect, or may make the condition worse, unless the patient is immediately supplied with fluid, glucose, saline, or blood in sufficient quantity. Certain stimulants may be employed for a specific reason, for instance, pitressin, to stimulate intestinal peristalsis, thyroid extract to increase general muscular tonus.

Few other drugs are required. The infected wounds, the peritoneal or thoracic cavity abscess, the appendiceal abscess, the inflammatory mass or abscess in any location should be cultured in order to determine whether it is advisable to give specific medication such as sulfapyridine or sulfanilamide. One or the other of these drugs should be used if there appears to be any reasonable justification for their use. If in doubt we would employ specific chemotherapy. Under specific medication, we would use prophylactic tetanus antitoxin if there has been an open wound made on the highway, on the farm or about the barn.

OXYGEN

The use of oxygen is one of the new advances in postoperative therapy. There are no contraindications to the use of oxygen. If there is any degree of cyanosis, oxygen is indicated. If the pulse is very rapid, oxygen is indicated. The patient which best shows the need for oxygen is the toxic thyroid patient. This patient has had a high metabolic rate, a rapid heart, rapid respiration, and is quite apprehensive. Oxygen by the intranasal route or in the oxygen tent is one of the best prophylactic measures in these patients. Dr. C. W. Mayo recently told us about the use of oxygen in the treatment of intestinal obstructions and paralytic ileus at the state medical meeting at White Sulphur Springs. If the patient is very greatly shocked, he needs oxygen. The newborn infant following a hard or manual delivery needs oxygen. The patient with a pulmonary or coronary

embolus needs oxygen badly. Oxygen should be available in every hospital. It should be possible to give it by the nasal route, the tent, or under some pressure with a mask over the face.

RESPIRATORY STIMULANT

Pure carbon dioxide is used by us frequently in a number of postoperative cases. It is used because it is a respiratory stimulant. Patients who are short and fat who have had an upper abdominal operation, patients with a cough pre- or postoperative, patients with a sudden elevation of temperature in the first twenty-four hours postoperatively, patients with short grunt-like or labored breathing, patients with pain in the chest except pleurisy pain, patients with diminished breathing over one lung, patients with large bronchial râles, all will be helped by the judicious use of carbon dioxide. If there is much bronchial secretions or a mucus plug present in a bronchus, the improvement will be spectacular. The patient will be able at once to expectorate two or three mouthsful of foul pus-like sputum. He is happy to get this relief. The carbon dioxide is administered from a D size cylinder with rubber tubing, the end of the tube being held four to six inches directly above the patient's nose. A small stream or flow of the gas is started, the administrator testing out the strength or concentration of the gas first, then applying it to the patient. This gas is heavier than air, therefore it drops toward the patient's nose and mouth and after two or three inhalations the patient is breathing in deep long respirations. This is kept up not over one or two minutes and repeated every two or three hours. This interval is increased as the symptoms clear up. If it is not administered in too concentrated a form the patient will always admit that he feels better after the use of this gas. This gas is not only a useful agent for the prevention and treatment of postoperative atelectasis but it is a useful agent for use on bedfast patients, the aged, the patient with fractured femurs, with a fractured vertebra, or anyone who has a tendency to develop hypostatic congestion of the lungs. This gas has been a very useful addition to our armamentarium.

Many patients with postoperative pain in the chest are helped or relieved by the use of heat. This is usually supplied by the use of a heat or therapy light directed to the part of the chest where the pain appears to be located. This light is used 20 to 30 minutes at a time and repeated every three or four hours.

Hiccough is one of the postoperative complications which is very difficult to treat satisfactorily. Here again carbon dioxide is useful, but may give only temporary relief. These patients should be given sedatives or narcotics in sufficient quantities to keep them comfortable. This will necessitate the frequent turning of the patient. If there is drainage in the upper abdomen or in the kidney region, it should be removed as soon as possible. This is a very unpleasant complication, one which if it hangs on indefinitely uses up the patient's strength.

MEDICAL ANESTHETIST

This discussion has been presented from the viewpoint of the anesthetist. We believe that the anesthetist should be a medical anesthetist. So often he assumes the prerogatives of the internist. So often he is called in consultation. So often he supervises a large part of the follow-up therapy. So often he is or may be responsible for the use of all of the procedures discussed in this paper. The anesthetist is in closer contact with the patient than any member of the surgical team. He observes and notes the actions and reactions which take place in the patient. He follows the patient from a state of consciousness to possibly the edge of the fourth stage of anesthesia or over dose. He brings the patient back to light anesthesia or consciousness. He has a sense of obligation to that patient which is held by no one else on the surgical team. The ability to live up to the expectations of the surgeon and the patient is acquired only after years of study, training, and experience. Without a medical education as a background, it is impossible to even aim at this goal.

235 High Street

REGIONAL ILEITIS*

By R. P. HAWKINS, Jr., M. D.
Clifton Forge, Virginia

In the medical literature of the early nineteenth century references were made to a lesion of the ileum and cecum which produced strictures, abscesses and fistulæ. It is, however, within the past 10 years that a hypertrophic inflammatory process in the ileum and cecum has been recognized as a definite clinical entity. It has been defined as a nonspecific granulomatous lesion. Various attempts to isolate a specific organism have been unsuccessful. The process resembles, and has been confused with a tuberculous infection. The bacillus of Koch has never been found. The lesion has been mistaken for a malignant one. Attempts have been made to explain the pathology on the basis of a lymphatic disorder.

The picture presented varies with the stage of the disease. In the acute phase the affected bowel is thickened and hyperemic. Edema of the wall and mesentery occur. Enlarged glands are found in the latter. Usually the process is chronic, involves all the intestinal layers equally, and is characterized by mucosal ulcerations and granulomatous and cicatricial thickening of the submucosa and muscular layers. The serosa becomes boggy, sticky and heavy. Consequently the bowel lumen becomes reduced in size by the scar tissue contraction. Ulcerated areas may proceed to perforation with resulting abscesses and fistulæ. Microscopically, the picture is that of a mingled acute and chronic inflammatory tissue reaction. The cecum and ileum are usually involved to varying degrees. Cases are reported in which the infection has reached as high as the jejunum. The disease is chronic and progression is insidious and longstanding.

*Read before the Association of Surgeons, Chesapeake and Ohio Railway, at White Sulphur Springs, October 19, 1939.

THE AUTHOR

Dr. Hawkins, graduate Medical College of Virginia; surgeon, C. & O. Hospital, Clifton Forge, Virginia.

Ileitis is recorded as a disease of young adults, the male predominating two to one, although this is contrary in our series, which, however, is small. Our cases include two males and three females. Ages vary between 15 years and 49 years. Terminal enteritis is characterized by the occurrence of low right abdominal pain, nausea, vomiting, diarrhea, loss of weight, anemia and general debility. Symptoms may subside temporarily, but the individual will usually state that his or her health has never been what it was prior to the onset of the initial symptoms which may have been months or even years ago. In the later stages a mass becomes palpable and obstructive symptoms of an incomplete nature appear. It is a chronic inflammatory process which may be presenting itself for years. One of our cases has had symptoms for 17 years. However, the onset may be acute and characterized by symptoms which exactly simulate any acute abdominal lesion, especially appendicitis.

X-ray findings in chronic cases are rather typical. There is constriction of the ileum to a varying extent. One loop or several may be involved. Proximal to the narrowing there is dilatation of the uninvolved adjacent loop or loops.

Complications of this disease may be the initial leads in establishing a diagnosis. The common complication is the occurrence of fistulæ, either internal or external. Perforations may appear between loops of bowel. Abscesses may point far distally. One author reports a fecal fistula following the drainage

of a perirenal abscess. Another reports a similar fistula following the drainage of a rectal abscess. Any spontaneous fistulous tract of fecal character should make one suspect ileitis.

The most satisfactory treatment in the chronic stage, from the standpoint of complete recovery, is resection of the involved bowel. There is much discussion whether the surgical management should consist of radical removal, or the more conservative procedure of ileocolostomy. Remission of the disease occurs in many cases. Certainly, then, when marked granulomatous changes, stenosis, obstruction, and ulceration occur, the only possibility of a permanent cure is in the removal of the affected gut, because of the tendency for perforations or fistulæ to develop. The more conservative ileocolostomy must be done, however, if the patient's condition or the extent of the lesion does not permit of radical extirpation. In the very acute phases of the disease extensive surgery should be avoided. It is much safer to wait until the patient has adjusted himself to the particular type of infection. Ileitis is not an emergency in so far as radical treatment is concerned. Even the removal of the appendix in the active stage may result in the formation of an external fistula.

FIVE CASES OF ILEITIS

At the Chesapeake and Ohio Hospital at Clifton Forge, Virginia, we have studied a series of five cases of ileitis.

The first one was a man who was explored by us. He was told that he had a malignancy of the cecum. Later he went to another hospital where a resection was done with a cure.

The second case was a woman, age 43. Symptoms dated back 10 years. She came in because of an acute obstruction. At exploration the ileitis was recognized and an enterostomy was done. Ten days later she had an ileocolostomy with complete recovery to date over a three year period.

The third case was a girl of 15 years. Four months previously she had had a supposed appendiceal abscess drained elsewhere. She came to us with multiple fecal fistulæ. An ileocolostomy was done with recovery over a three year period.

The fourth case was a man of 49 years. On admission his picture was that of a very acute right abdominal lesion. Symptoms had existed for 17 years. Fifteen years ago he had had appendectomy and cholecystectomy at a government hospital without relief. At operation a very extensive ileitis was found to exist. We did a resection, which proved to be an error of surgical judgment because he promptly died of general peritonitis. He would have fared much better with an ileocolostomy.

The fifth case was a girl of 20 years. One month previously her doctor told her that she had acute appendicitis. The acuteness subsided, but she stated that she did not feel well thereafter and was always uneasy in her right side. On the day of admission a mass was palpable in the right lower abdomen which was diagnosed as an ovarian cyst with twisted pedicle. At exploration eight inches of ileum were involved in a granulomatous process. Resection was done in this case. Only a few months have elapsed since her discharge.

Regional ileitis, terminal ileitis, terminal enteritis or granulomatous enteritis is certainly a distinct entity. Its recognition requires a little more detailed exploration in the doubtful acute abdomens, and a more careful differentiation from the so-called tuberculous or malignant lesions of the lower right quadrant of the abdomen.

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'Neurotic' Symptoms May be Due to Epinephrine

Epinephrine, the secretion of the adrenal glands, causes a rise in blood pressure and a slowing of the heart rate. Because of the close relation of these glands to the autonomic nervous system, the amount of epinephrine secreted may have a correlation with activity of this part of the nervous system, as evidenced by the states of excitement and fear.

PRENATAL DIET AND SOUND TEETH

W. ROSS BATSON, D. D. S.
Pine Grove, West Virginia

THE problem of public health is a major project that confronts the dentist as well as the medical man as never before. The dentist well realizes his position in the field. The medical profession has acknowledged the value of dental health, and the government realizes its importance, so it behooves us of the dental profession to help develop this field and place ourselves in a position to do the many things that are within our reach.

In my mind the medical and dental professions are very closely allied and are becoming more so as time passes. Our dental curriculum has, in the past ten years, brought to the dental student more about medicine and our position in public health.

The physician is in a position to be of great help in the field of dental health. He should think about the teeth of the child six months before its birth. The dentist does not have that opportunity. In this he should consider the elements required to build sound teeth before the child is born, as well as make provision for the adequate protection of the teeth after they have erupted. Dental care in the child should begin with the care of the mother, her nutrition and her general state of health. It would be advantageous if the obstetrician, the pediatrician and the dentist could consult before the child is born to the ultimate help of both mother and child.

Teeth are built primarily of calcium, magnesium and phosphorus, and to obtain the proper construction they need:

1. A sufficient supply of tooth building elements.

2. Control of acid-base condition of the digestive tract so that the tooth building elements will be properly absorbed.

Vitamin A, which is found in fish oils, cream, butter, milk, cheese, egg yolk and certain fruits, vegetables and beef, is important to the teeth because a lack of it induces structural abnormalities in the teeth.

THE AUTHOR

Dr. Batson, graduate Louisville College of Dentistry, Louisville, Kentucky, 1915; editor, West Virginia Dental Journal.

Vitamin B is found in whole grain cereals and breads, liver, nuts and to a lesser degree in milk and the leaves of plants. A lack of this vitamin reduces resistance to infection and deadens the appetite, with the result that a deficiency is detrimental to the growing child particularly.

Vitamin C is found in oranges, lemons, raw cabbage, water cress, fresh strawberries and grape fruit. The lack of it shows up in the mouth in swollen and bleeding gums and loose teeth.

Vitamin D is perhaps the most important and best known of all vitamins. It is probably the only vitamin not adequately supplied in the so-called balanced diet. It is found in fish liver oils and is produced in the skin by unfiltered sunlight.

It has been established that the normal calcium requirement for a diet is approximately one gram per day for adults and two grams for children. It is interesting to note that one quart of milk contains 1.2 grams of calcium. It also contains 0.9 grams of phosphorus, which is likely to be lacking unless milk and milk products, meats and eggs play an important part in the diet.

It is a well established fact that prevention, insofar as dental defect is concerned, starts before the birth of the child. Most mothers during pregnancy have periodic examinations by their physician who should do his part to insure healthy dentition in the child. When the child reaches the age of two and one-half to three years, the dentist's work begins.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

April is the month in which tuberculosis associations proclaim the importance of the early diagnosis of tuberculosis. Through various channels of publicity, the public is urged to take heed of the early symptoms. They are told also about the advantage of the tuberculin test and the x-ray as means of discovering tuberculosis even before symptoms appear. Physicians play their part by meeting the demand for more prompt and precise diagnosis. Dr. Sweany, who contributes this number of *Abstracts*, sees clinical tuberculosis through the eyes of the pathologist familiar with end results. An understanding of what lies beneath the often obscure signals of approaching tuberculosis should be valuable to the practitioner whose field of battle is mostly in the sick-room.

What The Doctor Should Know

After the tubercle bacillus was discovered, tuberculosis was soon found to be a generalized or systemic infection which only gradually becomes focalized in various organs as healing takes place. During the "generalization" phase there may be an ephemeral temperature lasting from two to ten days, after which few symptoms occur until advanced disease appears. The majority of primary infections (about 80 per cent in America) take place in the lungs. The rate of infection varies widely in different countries, even in different communities, but is generally decreasing.

The first, or primary infection in children occurs as varying sized patches of bronchopneumonia in the lung. From the local focus the bacilli follow the lymphatic vessels and form lesions in the various lymph nodes along the course of the lymphatics. The infection may finally reach the left subclavical vein whence it travels to the right side of the heart and becomes disseminated in the lungs. The bacilli many times pass through the pulmonary capillaries into the left side of the heart and from there to the general circulation to become deposited in all organs of the body.

All but an insignificant number of infections due to small dosage heal, but where there has been heavy exposure the lesions heal in only about 75 per cent of the cases. The lesions that do not heal may slowly spread by a growth or rupture in the bronchi or blood and lymph vessels. The infection may also spread from the lymph node lesions which may overflow and rupture. The bacilli may enter the blood stream, get into the general circulation, and cause a systemic dissemination. The average "latent" or "quiescent" period from the time of infection to the appearance of clinical disease has been found to be ten years.

Primary tubercles of adults on the other hand usually involve the lymph nodes less, have poorer capsules, and tend to localize more in the upper lung lobes. Therefore, the number of protracted primary "sequelar" lesions and exacerbations in the adults are fewer compared to those frequently found in the lymph nodes of children. For the same reason a more rapidly progressive pulmonary process is likely to occur in the adults. In brief, when the adult type produces disease it proceeds rapidly and is confined largely to the lung parenchyma. The average "latent period" is usually about three years.

After the first infection there is an acquisition of "allergy" or hypersensitiveness of the body cells to tuberculin. This sensitization of the body cells is shown by the tuberculin skin reaction. A relative immunity also develops largely independent of the allergy, although the latter in moderate degree may contribute to the resistance to infection. In excessive degrees allergy may aggravate the infection. The effects of these changes in the basic nature of the host tend to cause a localization of the process in the body organs and tissues, most of which occur in the lungs. This organ localization only develops gradually and is never complete except in cases that are healing.

The disease may continue as a "progressive primary lesion," an "exacerbation of a primary lesion," or be a much less frequent "new infection from without."

The majority of "reinfection" lesions are found along the subapical bronchi; the posterior upper quarter of both lungs are the sites of predilection in over 90 per cent of the early cases.

On the roentgenogram the lesions appear as small circumscribed or cloudy flecks a few millimeters in diameter.

The infection may spread to the other organs by the blood or lymphatic routes as it usually does during or after the primary infection. Direct implantations of bacilli cause laryngitis, enteritis, cystitis.

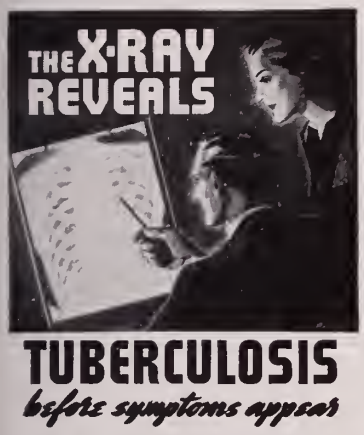
Following in the wake of the disease, non-specific "sequelar" lesions occur, including the distressing tracheobronchitis, bronchiectasis, bullous emphysema, and finally heart failure due to fibrous obliteration of the pulmonary capillaries and arterioles.

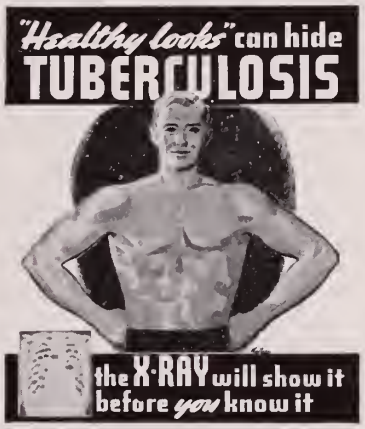
Apart from the preceding conditions caused directly or indirectly by the tubercle bacillus there is the whole gamut of diseases that may be associated with tuberculosis as a concomitant or associated process. Skill is required to differentiate each one from tuberculosis.

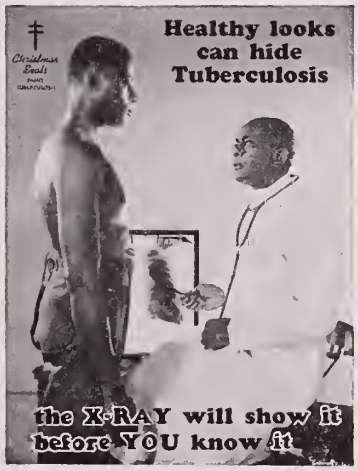
The physician, therefore, seems to be just coming into his own in the diagnosis and treatment of tuberculosis. The medical man in the home has the best opportunity and is in the majority of cases the only one to get the disease under control early. This is a hopeful trend.

In Detroit, Douglas has observed that about 75 per cent of diagnoses of tuberculosis are made by the general practitioners. Pleyte's recent surveys in Wisconsin leave little doubt that the general practitioners can and should play an important role in case finding. The "contacts" which made up 47.2 per cent of the group had 14.4 times the infection rate as that for the state as a whole. The most important group of all was the group of cases submitted by the practitioners of the state who have been encouraged to send films to the Wisconsin Anti-Tuberculosis Association for consultation. This group of cases was made up of patients who had had a contact with an open case, were ill, or had been or were suspected of being ill. In this group the rate was forty times the average morbidity rate for the state.

Henry C. Sweany, M. D. From the Research Laboratories of the City of Chicago Municipal Tuberculosis Sanitarium.







Reproductions of posters (the originals in colors) used by local tuberculosis associations in the Early Diagnosis Campaign. About eight million pieces of printed matter will be distributed.

Postponed Feedings After Pylorotomy

Neither food nor water should be given to infants for about twenty-four hours after pylorotomy, an operation to correct an abnormally narrow opening of the stomach into the small intestine, Harold K. Faber, M.D., and Joseph H. Davis, M.D., San Francisco, recommend in *The Journal of the American Medical Association* for March 9.

When this principle is followed vomiting has been considerably lessened and no serious difficulties after operation have been encountered, they state.

From their investigations of ten infants the authors conclude that after pylorotomy as well as other abdominal operations the wave-like contractions (peristalsis) by which the stomach empties its contents into the intestine are inhibited for from twenty-four hours to three days. Hence the practice of giving no food or water during the first day after operation should apply to pylorotomy as well as to other abdominal operations.

They point out that today infants requiring pylorotomy rarely come to the surgeon in the state of extreme malnutrition and lack of water which was common a few years ago and which made the administration of food and fluid by mouth at the earliest possible moment seem to be exceptionally urgent.

President's Page

This month we wish to digress from further discussion of our economic problems to touch on a matter of more immediate and more poignant interest. I refer to the thousands of sick, wounded, and homeless Finns who are so greatly in need of help now that the followers of Stalin have ravished this gallant little country. Most of us who live in civilized nations feel a strong desire to be of some assistance.

While none of us can afford to display too much interest in the troubles of war torn Europe, we cannot help but open our hearts to the shattered and homeless civilian population of the Finnish Republic. Believing that many of our Association members may welcome an opportunity to give a few dollars for Finnish relief, we have made arrangements whereby each member who so desires may make such a contribution through the State Association. Checks may be sent direct to the Association headquarters in the Public Library Building at Charleston, to be turned over to the Medical Division of the Finnish Relief Fund in New York City. This is not a request for money. It is simply a suggestion for those of you who care to help out and who would like to make a donation through your own State Association.

Perhaps I should point out that every dollar given for Finnish relief will be sent to the Finnish people and not one cent will be used for expenses. Contributions will be employed to feed, clothe and house the civilians who have lost their homes and their possessions as a result of the bombing of noncombatants by the Russian planes.

This move has been taken up by some physicians in New York City, who were named by Mr. Herbert Hoover to solicit funds from the medical profession. I am soliciting you through the JOURNAL at the request of the committee in New York. I hope you can all see your way clear to donate a few dollars to this worthy cause.

Frank V. Langfitt
President.

West Virginia Medical Journal
P. O. Box 787
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CHARLESTON, WEST VIRGINIA

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COURT OF APPEALS DECISION

It is perhaps unwise to comment too freely on the recent decision of the United States Court of Appeals for the District of Columbia in the case of the government against the American Medical Association. There is no doubt that practically all of our Association members read the newspaper stories covering the decision and are generally familiar with the vital issues which are at stake. The chief problem is whether or not medicine is a trade and, if so, whether or not there was a combination or conspiracy in restraint of trade as that term is used in the Sherman Act.

Physicians should remember that the decision of the U. S. Court of Appeals for the District of Columbia is not final. The Supreme Court has not yet spoken and, even if the Supreme Court sustains the Court of Appeals it still remains to be seen whether the persons charged in the indictment can be convicted. We know that the American Medical Association will fight to the last ditch to uphold the rights of the great profession which it represents.

Most of the editorial comment following the Court of Appeals' decision was favorable to the viewpoint of organized medicine. Best of all we like the attitude of *The St. Louis Globe Democrat*, which says: "* * * For the court to designate the practice of medicine a trade seems preposterous. There is and always has been a chasm of distinction between trade and profession. Legal definitions, of course, have before been known to ignore the dictionary. Yet most learned judges have striven to interpret words accurately. Certainly the Congressmen who passed the Sherman Act never faintly imagined their law would be construed to apply to medical practice. This case should be promptly appealed to the Supreme Court. The American Medical Association is fighting for the integrity of a profession that has given the United States the finest health protection of any nation in the world. If it is to continue to new achievement it must be free of regimentation, unhampered in development of standards and morale and practice, whose requirements doctors themselves may be justly assumed to know best."

CANCER WEEK

The need for proper education of the laity in health and medical matters is apparent to every thoughtful physician. One of the outstanding needs in this particular phase of the educational problem is the proper instruction of the populace generally in how to utilize the available facilities medicine has to offer. The approach of cancer week and the work of the Women's Field Army affords us an opportunity to commend the educational campaign now being carried on under the auspices of the American Society for the Control of Cancer.

Often a problem may be more forcefully presented when it is given a local application. What does cancer mean to West Virginia? The records of the Bureau of Vital Statistics of the State Department of Health show that deaths from malignancy increased from 62.8 per 100,000 population in 1928 to 72.11 in 1938, an increase of 14.8 per cent in a single decade. Of course, two factors must be considered in this increase: (1) the improvement in diagnosis of cancer, and (2) the fact that the average life span of the American population is increasing and more individuals are living to the age in which cancer is most prevalent. But even when

these points are given due weight, there must still be an absolute increase in the cancer death rate in West Virginia. The increase during the decade was gradual but steady, and the 1939 statistics, although not yet complete, will apparently show a slight rise over the 1938 figures.

In 1937 the total number of deaths in West Virginia from all causes was 19,190. Heart diseases, as a group, ranked first and accounted for 3,356 of the total. "Cancer and other malignant tumors" occupied second place causing a total of 1,376 deaths, or 7.17 per cent. In other words, one person out of every fourteen who die in West Virginia now succumbs to cancer.

The Women's Field Army is approaching the problem correctly. Their motto is "Fight Cancer With Knowledge." They are working especially through the Women's Clubs, the organizations of farm women and the parent-teachers' associations, and are endeavoring to carry the truth about cancer into every home within the state. Stress is laid on the necessity for periodic physical examination of the individual, and the absolute necessity for early diagnosis. In all their publicity they are emphasizing the importance of the physician in the battle to reduce the number of cancer deaths, and are stressing the three proven methods of cancer treatment, surgery, x-ray and radium. Great emphasis is laid upon the danger of delay after the appearance of suspicious symptoms, as well as the dangers of "quackery" and its attendant evils. Last but not least they are attempting to avoid hysterical fright among the laity, a by-product of campaigns against disease which has at times in the past been productive of much harm to the nervous lay individuals and to those sensitive to psychic trauma. May their efforts toward a sane campaign be as much of a success as their efforts at cancer education.

To the noble women engaged in this educational work we doff our hats, and we bespeak for them the aid of our professional brethren in the good cause they represent.

WEST VIRGINIA SCHOLARSHIPS

Plans to award 10 pediatric scholarships to that number of general practitioners in West Virginia, for the annual two week's pediatric seminar at Saluda, North Carolina, have just been completed under an arrangement worked out between the Association's Committees on Maternal and Child Welfare and the State Health Department. At the present time there are approximately 40 general men conducting yearly child health conferences from the health unit and the scholarship awards will be confined to this group.

The annual pediatric seminar at Saluda, near Asheville, North Carolina, is recognized as one of the outstanding short courses of its kind in the country and is widely attended by physicians from other states. In 1939 South Carolina sent 50 physicians to the seminar and Florida sent more than 20 doctors. The seminar faculty is made up of many of the leading pediatricians of the United States.

The West Virginia scholarships will include tuition and complete maintenance for the West Virginia doctors who are selected. Their only expense will be transportation to and from Saluda. The 1940 seminar will be held from July 15 to July 27. If these scholarship awards are considered successful, efforts will be made in 1941 to enlarge the number and to broaden the field from which selections are made.

Here again we see the great advantage of health department and medical association cooperation. Working together in close harmony, new plans and ideas are being continually worked out to the mutual satisfaction of both groups. Those who profit most from this relationship are the people of West Virginia, who collect their dividends in public health.

That most children are not happy and carefree, as many adults imagine, but actually spend considerable energy in worrying is illustrated by a study reported by Rose Zeligs, Cincinnati, in *Hygeia, The Health Magazine.*

General News

Simon's License Revoked

The West Virginia Public Health Council at its Charleston meeting on March 4, 1940, revoked the medical license of Dr. Szin Mose Eisen Simon of Williamson. At Dr. Simon's request, a 30 day stay of execution was granted pending the defendant's appeal to the circuit court of Mingo county.

Revocation charges against Simon were brought by the Mingo County Medical Society last spring. The hearing on the charges was held at the Council's Bluefield meeting in July, 1939. Thereafter the transcript and attorney's briefs were furnished Council members for study. It is understood that the Council's action of March 4 was unanimous.

Army Experience for Physicians

An interesting medical corollary to the augmentation of the United States Army during 1940 and 1941 and to the planned large scale army maneuvers during the spring and summer of 1940 is the broad medico-military experience which a great number of civilian physicians will receive. Medical reserve officers are being used to augment the entire army medical service, which includes everything from small unit installations to large station hospitals, general hospitals, and hospitals designed primarily for the treatment of specific types of cases.

Physicians under 35 years of age who are desirous of obtaining extended active duty with the army but who do not hold reserve commissions are being offered appointments in the medical corps reserve in the grade of first lieutenant, in order to permit them to be placed on such duty. Captains and lieutenants are at present being offered excellent assignments throughout the continental United States, and it is hoped that authority will be granted to actually permit some officers to go to Hawaii and Panama. In addition to having a new and very busy experience in the practice of medicine, the average officer finds the pay and allowances attractive. The pay and allowances for a married first lieutenant amount to approximately $263.00 a month; for a single first lieutenant to approximately $225.00 a month; for a married captain to approximately $316.00 a month; and for a single captain to approximately $278.00 a month. In most cases the above pay and allowances would apply inasmuch as government quarters are not usually available for officers on extended active duty. In the few instances where government quarters are available, the amounts would be $40, $60, $60 and $80 less per month respectively. In addition, the officer is reimbursed for mileage traveled from his home to his station, and upon completion of his tour of duty is reimbursed similarly for the travel to his home.

Application for one year of active duty, or for appointment in the medical corps reserve with a view of obtaining one year of active duty with the army, should be requested at once by a letter addressed to the commanding general of the Fifth Corps Area, Fort Hayes, Columbus, Ohio. In addition, the application should contain concise information regarding permanent address, temporary address, number of dependents, earliest date available for active duty, and that internship has been (or will be) completed; and it should be accompanied by a report of physical examination recorded on the Army Form W.D. A.G.O. 63, which may be obtained from any army station. From the group of reserve officers placed on extended active duty since August, 1939, over 25 per cent of those within the age requirements of 32 years of age or less for commission in the Regular Army Medical Corps found military service sufficiently to their liking to cause them to take entrance examinations for the regular army.

New Doctors Licensed

The following doctors were licensed by reciprocity at the meeting of the West Virginia Public Health Council on March 4-6, 1940:

Garvey B. Bowers, Kimball; Lloyd G. Caylor, Highcoal; Clinton B. Chandler, Iaeger; Herbert Duncan, Lewisburg; Herbert J. Erwin, (colored) Lakin; Everett L. Gage, Princeton; Cole D. Genge, Huntington; Arthur Gersabeck, Maybeury; Linus W. Hewit, Bluefield; Alan S. Horwitz, Bancroft; Michael G. Hresan, Minden; Junior Moore, Beckley; Oren B. Richards, Belle; David E. Sauer, Kingwood; Marshall J. Thomas, Elkins; James Percy Wade, (colored) Worth; Glenn S. Weaver, Spencer; Henry J. Wiser, Bluefield; Joseph C. Wood, Elkins.

Medical Technologists

At the request of the Surgeon General of the Army and in compliance with its policy of cooperation with both the Army and Navy, the American

Red Cross, as an expansion of its peace-time service for the military forces, has undertaken the enrollment of various types of medical technologists who are willing to serve in the medical departments of the Army and Navy if and when their services are required at the time of a national emergency.

Persons with the following qualifications will be enrolled:

Chemical laboratory technicians (male), dental hygienists (male and female), dental mechanics (male), dietitians (male and female), laboratory technicians (male and female), meat and dairy hygienists (inspectors) (male), nurses (male), occupational therapy aides (male and female), orthopedic mechanics (male), pharmacists (male and female), physical therapy technicians (aides) (male and female), statistical clerks (male and female), x-ray technicians (male and female).

General qualifications for enrollment are as follows:

1. Citizens of the United States.
2. Ages 21-45 years (Army); 18-35 (Navy—men only).
3. Physically qualified. Applicants must pass a satisfactory physical examination, according to standards set respectively by the Army and Navy Medical Departments.
4. Women applicants must be unmarried.
5. All applicants must express a willingness to serve as a technologist in time of a national emergency.

Male technologists will be eligible for enlistment in the Army as non-commissioned officers in the grades of sergeant, staff sergeant, or technical sergeant. Women technologists, and men who do not qualify physically, will be eligible for employment by the Army as civilians.

For the Navy, male technologists will be eligible for enlistment in the Naval Reserve as Petty Officers—Pharmacist's Mates, third, second and first class, and Chief Pharmacist's Mate (acting appointment). Women technologists are not eligible for service in the Navy under present plans.

The medical department of the Army will require a considerable number of technologists in each of the above named groups. The Navy Medical Department requirements will be similar except for dietitians, occupational therapy aides, orthopedic mechanics and dairy and food hygienists (inspectors) who will not be needed. Notwithstanding the maintenance of this enrollment, the Navy also desires peace-time enlistment in the U. S. Naval Reserve, and male technologists who wish to enlist in the Naval Reserve are urged to communicate direct with the commandant of the Naval District in which they reside. The address of their commandant will be furnished upon request.

Technologists who qualify according to these general standards and who are willing to enroll for service as outlined above should communicate with The American Red Cross, Washington, D. C.

The State Program

Plans for approximately 30 scientific exhibits for the joint meeting of the Virginia and West Virginia Medical Societies at White Sulphur Springs next July 29-31, have been completed and the scientific exhibits promise to be one of the outstanding features of the combined gathering. Few scientific exhibits have been displayed at recent meetings of the West Virginia State Medical Association, but there has been a lively interest this year and some excellent work by West Virginia doctors and allied organizations will be set up.

Dr. Fred Whittlesey of the School of Medicine, Morgantown, is in charge of the West Virginia exhibits. Dr. W. Ambrose McGee of Richmond is chairman of the Virginia exhibit committee. Dr. Whittlesey and Dr. McGee are planning to meet at White Sulphur this month to arrange for the display booths preliminary to assigning space.

Meanwhile the scientific program is rapidly nearing final completion and should be ready for release in April. A meeting of the West Virginia program committee is planned early in the month to select discussants for the guest speakers. There will be two discussants for each lecture, one representing each state society.

Since the last issue of the JOURNAL, Dr. Langfitt has announced the acceptance of Dr. Paul White, Boston, to deliver the annual Oration on Medicine. Dr. White has also agreed to conduct a roundtable discussion for the Sections on Internal Medicine and for the Heart Association. The Oration on Surgery will be delivered by Dr. Irvin Abell, Louisville.

The other out-of-state speakers who will appear before the joint session will be Dr. H. B. Stone, Baltimore, "Delayed Treatment of Appendicitis"; Dr. Walter Alvarez, Rochester, Minnesota, "The Patient Who is Always Complaining"; Dr. Ross Golden, New York City, "Lesions of the Small

Bowel"; Dr. Ralph M. Tyson, Philadelphia, "Management of Urinary Infections in Childhood"; Dr. Wesley C. Bowers, New York City, "Sinus Therapy"; Dr. A. I. Folsom, Dallas, Texas, "The Female Bladder"; Dr. George E. Bennett, Baltimore, "The Orthopedic Treatment of Arthritis"; Dr. Karl M. Bowman, New York City, on neuropsychiatry, and Dr. Frederick C. Irving, Boston, on obstetrical and gynecological problems.

A. P. H. A. Convention

The sixty-ninth annual meeting of the American Public Health Association will be held in Detroit, Michigan, October 8-11, with the Book-Cadillac Hotel as headquarters. The Michigan Public Health Association, the American School Health Association, the International Society of Medical Health Officers, the Association of Women in Public Health, and a number of other allied and related organizations will meet in conjunction with the association.

The Michigan Committee on Arrangements is headed by Mr. Abner Larned of Detroit. Dr. Henry F. Vaughan, health commissioner of Detroit, is executive secretary.

The annual meeting of the American Public Health Association is the largest health convention held on this continent. It will bring 3,500 health officials to Detroit for a series of scientific meetings covering all phases of health protection and promotion. A health exhibit will be held in connection with the meeting and an institute on health education is scheduled prior to the official opening.

Dr. Reginald M. Atwater is executive secretary of the American Public Health Association, with offices at 50 West 50th Street, New York City.

History Help Wanted

For the past eighteen months the Woman's Auxiliary to the West Virginia State Medical Association has had its historical committee engaged in seeking photographs and biographical data on the past presidents of the Association. A great deal has already been accomplished along this line under the direction of Mrs. Ralph Hogshead of Montgomery, who is heading the project this year.

In an effort to be helpful to Mrs. Hogshead and her committee, we are listing below the names of our past presidents about whom we have incomplete data. This is followed by a second list of past presidents whose photos are desired. These two lists are being published in the hope that readers who are able to furnish either information or photographs will get in touch with Mrs. Hogshead.

Past presidents for whom biographical data is needed are:

Dr. W. J. Bland, Weston; Dr. B. W. Allen, Morgantown; Dr. George Baird, Wheeling; Dr. T. A. Harris, Parkersburg; Dr. L. S. Brock, Morgantown; Dr. S. H. Austin, Charleston; Dr. C. Shriver, Brooke county; Dr. D. Mayer, Charleston; Dr. N. B. Baker, Martinsburg; Dr. C. E. Ulrich, Wheeling; Dr. George A. MacQueen, Charleston.

Past presidents whose pictures are missing are:

Dr. J. W. Ramsey, Fairmont; Dr. J. M. Lazzelle, Fairmont; Dr. S. W. Hall, Jane Lew; Dr. Matthew Campbell, Parkersburg; Dr. W. F. Van Kirk, Grafton; Dr. B. W. Allen, Morgantown; Dr. A. Gerstell, Keyser; Dr. George Baird, Wheeling; Dr. T. A. Harris, Parkersburg; Dr. S. H. Austin, Charleston; Dr. C. Shriver, Brooke county; Dr. D. Mayer, Charleston; Dr. N. B. Baker, Martinsburg; Dr. C. E. Ulrich, Wheeling; Dr. A. H. Thayer, address unknown; Dr. G. A. Aschman, Wheeling; Dr. J. E. Rader, Huntington.

A. M. A. Golf Tournament

The American Medical Golfing Association's Twenty-Sixth Annual Tournament will be held at Winged Foot Golf Club, Mamaroneck, New York, Monday, June 10, 1940. Winged Foot has two championship courses. Some 250 out of the 1,360 Fellows of the A. M. G. A. are expected to take part at Winged Foot in the 36-hole competition. Each contestant will play both courses. The hours for teeing off are from 7:00 a. m. to 2:00 p. m.

The sixty prizes, in the nine events, will be distributed after the banquet at the club house at 7:00 p. m. All members of the A. M. A. are eligible for fellowship in the A. M. G. A. For registration application write the secretary, Mr. William J. Burns, 2020 Olds Tower, Lansing, Michigan.

Compensation Examiners to Meet

Dr. Sumner L. Koch, prominent Chicago orthopedic surgeon and associate editor of *Surgery, Gynecology and Obstetrics*, will be the speaker at a joint meeting of the Medical Examiners of the Workman's Compensation Department and the West Virginia Society of Industrial Physicians and Surgeons at Charleston on Wednesday morning,

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April 10, 1940. He will discuss the relationship of pre-existing arthritis to trauma, and management of low back injuries in compensation cases. The meeting will be held at the Daniel Boone Hotel.

Dr. Koch will address the Kanawha Medical Society on Tuesday evening, April 9, at which time the industrial physicians and compensation examiners will be special guests. His talk before the Kanawha Medical Society will be on the management of acute injuries.

State Hospital Meeting

The fourteenth annual meeting of the Hospital Association of West Virginia will be held in connection with the hospital association meetings of Virginia and the Carolinas, at Winston-Salem, on April 4, 5, 6, 1940. Mr. T. Harvey McMillan, Charleston, president of the West Virginia Hospital Association, anticipates a good attendance from this state.

The four state hospital groups meeting at Winston-Salem comprise a group sufficiently large to make possible an excellent program and many of the leading hospital executives of the United States will be present. West Virginia is represented on the program by Mr. J. Stanley Turk, of Wheeling, a former president of the State Hospital Association.

The West Virginia group will meet at four o'clock on the afternoon of April 4, for the election of officers and other business transactions. Entertainment features include a buffet supper on the evening of April 5 honoring state presidents, and the annual banquet and ball on the evening of April 6.

Grants-in-Aid System

If the pattern of financing states by federal grants-in-aid is to become a fixed part of the distribution of medical and health services, the medical profession must continue to take a sympathetic interest in distribution methods in order to avoid, where possible, the losses and abuses always accompanying such grants, R. G. Leland, M. D., director the Bureau of Medical Economics of the American Medical Association, Chicago, declares in *The Journal* of the Association for March 23.

Pointing out the loss of local control and autonomy under such a system, he states that for the fiscal year ending June 30, 1939, the payments to states under that portion of the Social Security Act concerned with public health work totaled $7,985,119.61.

County Society News

Cabell County

The regular monthly meeting of the Cabell County Medical Society was held at the Governor Cabell Hotel, Huntington, on the evening of March 14 and the scientific program was presented by the internes of the various hospitals of the city. Those who gave papers were:

Dr. W. V. Claiborne, C. and O. Hospital, "The Blood Smear in Diagnosis."

Dr. Albert Felbau of the Memorial Hospital, "Splenic Anemia."

Dr. J. S. Pearson of the St. Mary's Hospital, "Liver Function in Carbohydrate Metabolism."

J. L. HUTCHINSON, *Secretary*.

Central West Virginia

The Central West Virginia Medical Society met at Sutton on February 27 with the Sutton Rotary Club. Following routine business matters, the program was turned over to Dr. M. T. Morrison, chairman, who introduced the guest speakers.

Essayists for the occasion were Dr. Albert H. Hoge, Bluefield, who spoke on "Fads and Fallacies of Endocrine Therapy"; Dr. Walter E. Vest, Huntington, who talked on "The Ideal Health Program for the United States", and Dr. R. H. Walker, Charleston, who discussed "Appendicitis." All topics were discussed by the assembled doctors.

Delegates elected to represent the society at the State Meeting were Dr. M. T. Morrison and Dr. Eugene Brown, with Dr. J. P. Eakle and Dr. George D. Hill as alternates. Dr. A. B. Bowyer was asked to continue as secretary, although located in Kanawha county.

A. B. BOWYER, *Secretary*.

Fayette County

The Fayette County Medical Society at its meeting held March 12 at Conley Hall, Montgomery, had as the guest speaker Dr. J. M. Meredith of the Department of Neurological Surgery, University of Virginia, who presented a highly interesting paper on "Diagnosis and Treatment of Acute Head Injuries." Discussion was led by Dr. N. L. Cardey, Dr. J. N. Reeves, Dr. T. K. Laird, and Dr. A. A. Wilson of Charleston. There were 32 members and guests in attendance.

The next meeting of the society will be held at Conley Hall on April 9 with Dr. S. H. Starr,

Associate Professor of Gynecology and Obstetrics, University of Louisville, as guest speaker. Dr. Starr will speak on "Toxemias of Pregnancy."

G. A. DANIEL, *Secretary*.

Kanawha Medical Society

Dr. Sumner L. Hoch, widely known Chicago orthopedic surgeon, will be the guest speaker before the Kanawha Medical Society at its next regular meeting at the Daniel Boone Hotel, Charleston, on the evening of April 9. This meeting will be held jointly with the West Virginia Society of Industrial Physician and Surgeons and the West Virginia Compensation Examiners. Dr. Koch's subject will be "Treatment of Recent Injuries."

Dr. Koch will address a special meeting of the Industrial Physicians and Compensation Examiners on the morning of April 10.

Dr. James M. Ruegsegger, Cincinnati, was the guest speaker at the March 12 meeting of the society. His subject was "Latest Advances in the Treatment of Pneumonia," in which he drew on his large experience at the Cincinnati General Hospital. A premeeting dinner in honor of Dr. Ruegsegger was held at six o'clock.

W. A. THORNHILL, *Secretary*.

Lewis County

Dr. J. L. Blanton, Fairmont pediatrician, was the guest speaker at the March 12 meeting of the Lewis County Medical Society, held at the Spencer State Hospital. Dr. Blanton gave an address on "Infectious Diseases in Children," which was very instructive and interesting.

A very nice social program followed with Dr. J. E. Offner as host. A very pleasing lunch was served.

E. A. TRINKLE, *Secretary*.

Logan County

The regular meeting of the Logan County Medical Society was held on the evening of February 21. Mr. R. A. Barker, director of the County Department of Public Assistance, gave a short talk on the activities of his department pertaining to the medical profession. Dr. W. P. Hamilton, county health officer, and Dr. M. C. Brown, director of the syphilis project, also gave a few explanatory remarks on the work of their departments.

The society voted to create a public relations committee similar to that of the Parkersburg Academy of Medicine. The society also instructed the secretary to communicate with the other societies about holding the 1941 state meeting in Charleston.

Dr. Walter N. Rowley of Huntington was the guest speaker at the March 13 meeting of the society which was held at the Woman's Club, Logan. Dr. Rowley talked on "Points of Importance in Surgical and Medical Gynecology," illustrating his talk with lantern slides.

The society went on record as favoring the action of the Association's Medical Service Committee relating to the handling of compensation cases.

J. W. CARNEY, *Secretary*.

Marion County

The Marion County Medical Society was host to the Tri-County Medical Meeting, consisting of Marion, Monongalia and Harrison counties, at the Fairmont Hotel, Fairmont, on the evening of February 27. The guest speaker of the evening was Dr. William Love, Jr., Clinical Professor of Medicine, University of Maryland, who gave a highly interesting talk on "Coronary Artery Disease", illustrated with lantern slides. There was a large attendance and a liberal discussion following Dr. Love's presentation.

A society dinner was held at the Fairmont Hotel preceding the scientific meeting.

JOHN HELMICK, *Secretary*.

Marshall County

The Marshall County Medical Society held its regular monthly meeting at Moundsville on the afternoon of March 12 with a good attendance. The program consisted of a moving picture on "Prenatal Care and Eclampsia," produced by Dr. Joseph B. Le at the Chicago Lying-In Hospital. The picture was discussed by Dr. Don S. Benson.

At this meeting the society instructed its delegates to the state meeting to vote for a change of meeting place to different West Virginia cities, instead of holding the meeting each year in White Sulphur Springs.

J. A. STREIBICH, *Secretary*.

Mercer County

The regular monthly meeting of the Mercer County Medical Society was held at the Memorial Building, Princeton, on February 28 with a good attendance. The guest speakers were Dr. P. A. Tuckwiller, Charleston, who discussed several interesting cases including one of tularemia and one

of a dissecting abdominal aneurysm, and Dr. M. L. Bonar, Charleston, who discussed the treatment of the more common skin diseases.

After the meeting the society and their guests were entertained with a buffet luncheon by Dr. J. R. Vermillion at his home.

FRANK HOLROYD, *Secretary.*

Monongalia County

A highly interesting symposium on "Treatment of the Injured", comprised the scientific program for the Monongalia County Medical Society at its March 5 meeting at the Hotel Morgan, Morgantown. The meeting was preceded by a six o'clock dinner.

All speakers were limited to a 10 minute discussion. Those presenting the program in its different phases were Dr. R. R. Summers on "First Aid", Dr. C. C. Romine on "Wounds and Hand Infections", Dr. W. H. Howell on "Compound Fractures and Open Reductions", Dr. C. T. Thompson on "Head Injuries", Dr. W. B. Scherr on "Shock", Dr. John H. Trotter on "Eye", Dr. Fred R. Whittlesey on "Pneumoconiosis", and Dr. J. C. Pickett on "Rehabilitation."

CARL E. JOHNSON, *Secretary.*

Ohio County

Dr. T. Grier Miller, Professor of Clinical Medicine, University of Pennsylvania, Philadelphia, was the guest speaker at the March 8 meeting of the Ohio County Medical Society held in the Solarium of the Ohio Valley General Hospital. Dr. Grier spoke on "Medical Aspects of Gastric and Duodenal Ulcer." General discussion was led by Dr. J. W. Gilmore and Dr. D. A. MacGregor.

At the March 22 meeting, Dr. Stanley T. Reimann, Pathologist of Lankenau Hospital, Philadelphia, spoke on "Secondary Breast Tumors." Discussion was led by Dr. W. T. McClure and Dr. H. G. Little.

Dr. George P. Miller, Professor of Surgery, Jefferson Medical College, and Dr. L. J. Karnosh, Associate Clinical Professor of Nervous Diseases, Western Reserve University, will be the essayists for the two April meetings of the society. Dr. Muller will speak on "Acute Appendicitis" on April 5 and Dr. Karnosh on "Neuralgia, Neuritis and Neurosis", on April 19.

R. W. LUKENS, *Secretary.*

Parkersburg Academy

The regular monthly meeting of the Academy of Medicine of Parkersburg was held at St. Joseph's Hospital on the evening of February 7 with Dr. J. L. Wade, president, presiding. The speaker was Mr. Charles B. Selby, Clarksburg pharmacist, who gave a very interesting talk on "Proprietary versus Pharmacopeal Preparations."

During its business session the academy voted its endorsement of the proposed new Army Medical Library in Washington. Dr. Wade reported on the Conference of Secretaries and Presidents in Charleston. The applications of three physicians were referred to the board of censors. A committee of eye, ear, nose and throat physicians was appointed to report back to the academy on the question of free tonsillectomies for charitable organizations.

Dr. L. H. Newburgh of the University of Michigna, Ann Arbor, was the guest speaker at the March 6 meeting of the academy at the City Hospital. He gave a very interesting talk on diabetes, illustrated by lantern slides and followed by many interesting questions and much discussion.

During the business session the academy voted to confer junior memberhips on the house men. New members elected were Dr. Bevauqua, Dr. Morehead and Dr. Quillan. Dr. Tillson, medical director of the Viscose plant, invited the members to lunch and make a tour of the plant at some fixed time in the near future.

Dr. Walter E. Lee, Professor of Surgery at the University of Pennsylvania Postgraduate School, will be guest speaker at the April 3 meeting of the academy at St. Joseph's Hospital. His subject will be "Surgical Infections and Chemotherapy."

A. C. WOOFTER, *Secretary.*

Preston County

The Preston County Medical Society held its regular meeting on March 7 with 12 members in attendance. The program consisted of a moving picture on "Eclampsia", which was highly interesting and brought forth much discussion from the members in attendance.

C. Y. MOSER, *Secretary.*

The white race is the only race with both straight and curly hair, other races having either one or the other, according to *Hygeia, The Health Magazine.*

TWENTY-FIVE YEARS AGO

From The West Virginia Medical Journal, March, 1915.

Original articles appearing in the April, 1915, JOURNAL were by Judge H. C. Hervey of Wheeling (The Rights and Duties of the Physician in Court), Dr. B. F. Matheny, Clarksburg; Dr. S. L. Cherry, Clarksburg; Dr. D. T. Williams, Martinsburg; J. A. Guthrie, Huntington; C. A. Fleger, Seth.

From Dr. J. E. Cannaday's report on the Southern Surgical and Gynecological Association's Twenty-seventh Annual Session: "Dr. McCarty of Rochester discussed cancer from the viewpoint of the pathologist, etc. * * * At this point some one came in and asked the privilege of the floor. He wished to announce that the German fleet had shelled the English coast, and that one of the greatest naval engagements of modern times was taking place. The dispatch was received coldly. A little later a report (false, as we learned later) was received to the effect that three German cruisers had been sunk. Cheering greeted this announcement."

"A Call. The plans for the meeting of the West Virginia State Medical Association to be held in Huntington, May 12, 13 and 14, have about been perfected, and from all indications this promises to be one of the best, if not the best meeting, from an educational as well as a social standpoint, ever held in the state. * * * Prominent among those from out of the state who will entertain you will be that great investigator, Dr. George W. Crile of Cleveland. * * *

H. P. Linsz, President."

Harrison County Medical Society Meeting: "The members then adjourned to the dining room, where a little feast adorned the board. After the plates were cleaned, Dr. H. H. Haynes brought in a case of primary syphilis. The living spirochete pallida was demonstrated to many of the members with the dark ground illuminator.

Members present: Drs. L. K. Kornman, S. L. Cherry, J. E. Wilson, E. F. Wehner, B. F. Matheny, D. E. Ritter, C. O. Post, J. Folk, A. T. Post, E. Pendleton, C. T. Arnett, Dr. Gaston, B. F. Shuttleworth, H. H. Haynes, W. T. Gocke, P. C. Showalter, and H. H. Esker.

Obituaries

Joseph M. Miller, M. D.

Dr. Joseph M. Miller, 87 years of age, prominent Charles Town physician, died at his home on February 28. He had been in failing health for several years but had continued in active practice until a few months ago. He had been engaged in practice for more than 60 years, of which 40 years were spent in Charles Town.

Dr. Miller was born in Rockingham county, Virginia, in 1853. In 1877 he was graduated from the College of Physicians and Surgeons, Baltimore. Four years later he came to West Virginia and engaged in general rural practice until he located permanently in Charles Town in 1901. He is survived by his widow and one son.

Hugh A. Barbee, M. D.

Dr. Hugh Arthur Barbee, prominent Mason county physician of Point Pleasant, died in a Gallipolis hospital on January 29 of meningitis. He was 65 years of age and was engaged in practice in West Virginia for 39 years. Dr. Barbee graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1895 and received his West Virginia license the same year.

Dr. Barbee was the son of Dr. Andrew R. Barbee of Point Pleasant who died in 1903. The elder Dr. Barbee was one of the early members of the West Virginia State Medical Association, serving as its president in 1876. He also served at one time as state health commissioner.

William J. Melvin, M. D.

Dr. William J. Melvin of Darke, West Virginia, died in the Charles Town Hospital on February 19, 1940, from pneumonia. He was 72 years of age and had been engaged in practice for approximately 50 years.

Dr. Melvin was a graduate of West Virginia University and received his medical degree from the Kentucky Medical College, Louisville, in 1890. He practiced for several years at Hagerstown, Maryland, before locating at Darke, his home town. He was a member of the Jefferson county court at the time of his death. Dr. Melvin is survived by his widow and one daughter.

BOOK REVIEWS

Scudder Blood Studies

Shock. Blood Studies as The Guide to Therapy, by John Scudder, M. D., Med. Sc. D., F. A. C. S. J. B. Lippincott Co., Philadelphia.

This book brings order and definiteness into the treatment of shock. No longer need it be necessary to trust to genius and intuition in treating the shock patient with fluids, hypertonic or isotonic, stimulants, transfusions, heat, etc. Moreover, no longer is it necessary to await a drop in blood pressure, a rise in pulse rate and a cold, clammy skin before instituting needed therapy. By the proper use of cell volume, specific gravity of whole blood, the specific gravity of plasma and the estimation of plasma proteins, the physician is warned of impending shock before the development of symptoms, and by the use of measures which the author describes is enabled to prevent its appearance. The author states that " these four tests for dehydration can be done in fifteen minutes time. The adequate information gained enables the direction of adequate therapy and surgical measures." The measures employed are: use of intravenous fluids, iso- and hypertonic saline, blood transfusions and adrenal cortical extracts.

The premise of the author's work is "In shock, certain symptoms result from a sudden influx of intracellular fluid, whether from areas of tissue abuse and trauma, or from hemorrhage and dehydration." The diagnosis and treatment is based upon the discovery and treatment of hemoconcentration. The changes in potassium distribution are shown throughout the various phases of shock.

Very little space is devoted to theoretical consideration. This is not an oversight, however, since a most extensive bibliography accompanies the work. Throughout charts, case history abstracts and practical application are stressed.

The final section of the book is a laboratory manual which deals with that phase of the work which must be allocated to the laboratory. Equipment and technique therefore are described.

The book is well illustrated with fifty-five illustrations and five plates.

This is a masterly presentation of an important subject. The foreword by Allen O. Whipple, which closes with these words, "These methods have been of the greatest therapeutic value to the surgical service of the Presbyterian Hospital," indicates to whom this book can best be recommended.

Saga of a Country Doctor

An interesting and entertaining story of medical practice along the highways and by-ways of West Virginia has recently come from the pen of Dr. F. F. Farnsworth, prominent Milton physician. The book, which was privately printed in the plant of Woodyard Commercial Printers, Charleston, is attractively bound and consists of 130 pages. Copies at $1.50 each may be procured from the author.

The Saga of a Country Doctor is a biographical sketch of Dr. Farnsworth's life. The author makes no literary pretensions, but records in a straightforward manner some of the incidents of a long and interesting life. Having been successively a railroad laborer, woodsman, salesman, farmer, teacher and physician, Dr. Farnsworth has a wealth of material to draw from.

While Dr. Farnsworth's early life presents an unusually fine picture of rural West Virginia in the 80's, we are chiefly concerned here with his medical career. Perhaps the most interesting part of his all too short volume deals with the 20 year period prior to the World War when he practiced in the hills of Upshur county as a "Horse and Buggy Doctor." To those of us who hanker back to "the good old days," there is much satisfaction and contentment in any honest volume that deals with the dirt road era. Dr. Farnsworth handles his own "Horse and Buggy" days with good humored candor.

Dr. Farnsworth served one term in the West Virginia legislature and his book carries a lively account of his activities in helping to create the present State Health Department. He later served as director of the Bureau of Venereal Diseases. In 1922 he moved to Milton where he has since been engaged in private practice. The doctor's little volume will provide a pleasant evening's reading.

Preclinical Medicine

Preclinical Medicine, Preclinical States and Prevention of Disease, by Malford W. Thewlis, M. D., Attending Specialist, General Medicine, United States Public Health Hospitals, New York. The Williams and Wilkins Company, Baltimore, Md.

By their failure to sell the public yearly physical medical inventory, the medical profession in West Virginia has failed to take advantage of a very satisfactory and lucrative form of practice. This book deals largely with the professional equipment necessary to satisfactorily follow out such practice.

WITH OUR ADVERTISERS

Mead Johnson

What every woman doesn't know is that psychology is more important than flavoring in persuading children to take cod liver oil. Some mothers fail to realize, so great is their own distaste for cod liver oil, that most babies will not only take the oil if properly given but will actually enjoy it. Proof of this is seen in orphanages and pediatric hospitals where cod liver oil is administered as a food in a matter of fact manner, with the result that refusals are rarely encountered.

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Woman's Auxiliary

Convention Plans

Convention committees of the West Virginia Auxiliaries are planning a round of social events for the meeting at White Sulphur Springs, July 29, 30, 31, that will crowd the convention days with interest.

There will be the elaborate tea West Virginia Auxiliary members will give for Virginia delegates Monday afternoon, July 29, and on Tuesday the West Virginia Auxiliary will follow with a luncheon also complimenting the Virginia group. On Wednesday the Virginia Auxiliary will entertain West Virginia Auxiliary members at a luncheon. There will also be the annual breakfast for past presidents and a number of other events. All of these will occur at the Greenbrier Hotel.

Auxiliaries from both states will also join with the medical societies for entertainment planned by them for each evening. Sports will again occupy an interesting place on the convention program for the doctors' wives as well as for the doctors. Business sessions of the West Virginia Auxiliary will open Tuesday morning, July 30, at 9:30 o'clock.

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Special Projects

"Special Projects" was added to the list of Auxiliary committees in 1937. The first project chosen was the compiling of biographies of all past presidents of the West Virginia State Medical Association. This has so far developed into a complete history of the activities of 65 doctors. The historian is still making inquiries into all phases of this work.

This year's special project is the attempt at writing a history of the Woman's Auxiliary to the West Virginia State Medical Association. This would, and could be a most worthwhile account, were it not for the fact that records of early meetings are at most sketchy and only records of officer personnel are listed.

When the various Auxiliaries were organized, doctors' families knew very little of one another. Those who had grown up together were friends, but towns were expanding into cities, newcomers from other states were coming to settle and to share. In promoting friendliness among doctors, the Auxiliary has played a major rôle. Through its Public Relations Committee, annual open meetings with the laity have been instituted, to reach all organizations which look to the advancement of health education. The wives of doctors, as Auxiliary members, serve all club groups and assist in planning programs. Doctors are asked for and give authentic information. For example, slides on posture accompanied by a brief account, and placing *Hygeia* in rural schools. This is history as it is made.

In sending reports of county Auxiliary meetings, will you not please bear in mind that the accomplishments of this year are part of your history. If you who read this know of any exceptional happenings, or anything relevant to the bright past of your Auxiliary—will you please write in to either your historian or special projects committee. Your information is passed on to the national historian whose big task is to correlate all these events into a national history.

MRS. M. I. MENDELOFF, Charleston.

Cabell County

The Woman's Auxiliary to the Cabell County Medical Society met on March 11 at the home of Mrs. C. Walter Swann, with Mrs. Russell Cook as co-hostess, at Huntington. Mrs. H. E. Beard, vice chairman, called the meeting to order in the absence of Mrs. Edwin Humphreys. There were seventeen members present to hear Dr. Oscar Biern who gave a most interesting talk on "The Heart."

Each member prepared herself for open discussion on the revision of the Constitution and By-

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*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, Vol. 23, No. 2, pages 201-206, March, 1939.

JOHN WYETH & BROTHER, INCORPORATED, PHILADELPHIA, PA.

Laws of the Woman's Auxiliary to the West Virginia State Medical Association.

The next meeting will be held on April 8 at Huntington, with Mrs. C. O. Reynolds and Mrs. W. E. Neal, both of Huntington, as hostesses.

MRS. A. G. RUTHERFORD, *Secretary*.

Kanawha

The Woman's Auxiliary to the Kanawha Medical Society held their March 12 meeting at the Charleston Woman's Club. Mrs. V. L. Peterson, president, called the meeting to order and there were 35 members present. Dr. Roy Bird Cook, Charleston pharmacist, addressed them on "Early Doctors of West Virginia."

The April meeting will be held on the 9th at the home of Mrs. E. L. Shamblin.

MRS. RALPH E. PENCE, *Secretary*.

Logan

The Woman's Auxiliary to the Logan County Medical Society met on Tuesday, March 5 at the home of Mrs. C. A. Davis. Mrs. Davis and Mrs. A. M. French were co-hostesses to the group. Plans were discussed for placing *Hygeia* in the schools. Entertainment for Doctors' Day was discussed and a committee on arrangements was appointed.

"Doctors on Horseback" by James Thomas Flexner, was reviewed by the program chairman.

MRS. J. W. CARNEY, *Secretary*.

Marion County

The Woman's Auxiliary to the Marion County Medical Society held their regular meeting on February 27 at the Fairmont Hotel, Fairmont. Mrs. J. R. Tuckwiller, president, presided at the meeting. Twenty members were present and heard Mr. Joe Savage, executive secretary of the West Virginia State Medical Association, speak on "Medical Legislation."

Routine business was discussed and the next meeting date set for March 26 at Fairmont.

MRS. J. W. DAVIS, *Secretary*.

McDowell County

The Woman's Auxiliary to the McDowell County Medical Society held their regular meeting

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for January on the 10th, at the Appalachian Club Room in Welch. Mrs. H. P. Evans presided, in the absence of Mrs. James Vermillion, president. The number present consisted of 17 members and two visitors.

Only routine business was considered.

Their February 14 meeting was held at the same place and Mrs. James Vermillion, president, presided. Sixteen members and one visitor attended. Dr. James Vermillion addressed them on "Socialized Medicine."

The Auxiliary discussed presenting a talk by Dr. Vermillion to the Woman's Club, Junior Woman's Club and the Parent-Teachers' Association; also bringing the publicity of the radio health programs before the schools.

For their regular March meeting, the McDowell County Auxiliary will observe "Doctors' Day" at the same place.

MRS. G. P. EVANS, *Secretary.*

Parkersburg

The Woman's Auxiliary to the Academy of Medicine of Parkersburg, held their regular March meeting on the 12th at the Chancellor Hotel, Parkersburg. Mrs. Welch England, president, called the meeting to order and there were 25 members in attendance.

Mrs. A. C. Woofter of Parkersburg reviewed a book entitled "Why Doctors' Wives Are Lonely."

Under routine business, the Auxiliary discussed and made plans for their annual "Doctors' Day Dinner", to be held at the Chancellor Hotel, March 28.

MRS. ARCHBOLD JONES, *Secretary.*

Raleigh County

The Woman's Auxiliary to the Raleigh County Medical Society held their regular meeting on February 26 at the Beckley Hotel. Mrs. E. S. DuPuy presided and twenty members attended.

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Mrs. S. W. Price of Scarbro spoke on "Romance in Medicine." Mrs. C. L. Brown read two poems.

Mrs. E. S. DuPuy appointed Mrs. G. R. Cunningham of Killarney as historian of the Auxiliary.

Their next meeting will be on March 25, at the Beckley Hotel.

MRS. W. C. MAYS, *Secretary*.

Socialized Medicine

Health and how we can best keep it are of prime importance to the individual, the community, the state, and the nation. Without health, security and progress are impossible. Realizing how much the welfare of a nation depends on its good health, civilized governments have been turning more and more attention toward health problems. Americans are asking what they can do to improve public health.

In America organized medicine has always acknowledged its responsibility towards building a healthier and better America. It has worked for the passage of laws it considered friendly to the best interests of the public. It has opposed those laws it considered detrimental. Through its efforts and support, laws have been passed that have improved sanitary conditions, spread health education and public health activities, and protected public from harmful foods, drugs, and corrupt medical practices. These laws have done much towards the prevention and mitigation of disease.

The Woman's Auxiliary is anxious to assist the State Medical Association in its work to promote better community health through health legislation. It can be a real aid if each auxiliary is willing to study the problems of health legislation that confront medicine today, then proceed with the caution and discretion its position as a subsidiary organization demands. No action should be taken publicly or privately, collectively or individually without (1) an intelligent understanding of all the issues and factors involved, and (2) expressed permission and sanction of the medical association.

In the last twenty-five years there have arisen factors which have definitely changed the trend of political thinking and legislation affecting medicine. Some of these factors are widespread unemployment, low farm incomes, shifting areas of population, poor housing, improper and insufficient food. A study of the relationship of these factors to public health then is the first step in understanding and

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helping with future medical legislation. Medicine touches life in general at so many more points today than in the past that its social and economic aspects can not be ignored.

Because of the factors mentioned in the above paragraph and the continuation of general depression which have made it difficult for an ever increasing number of people to pay for the best medical service, there have sprung into being many plans for better medical coverage. Coupled with this is the growing tendency on the part of the public to dispose of all its difficulties through legislation. So as auxiliary women, interested in medical legislation, we should examine carefully the most popular of these plans, and the attitude taken by the medical profession towards each plan.

All of the programs designed to make purchase of medical care easier for people can be grouped under the general heading of "socialized medicine", or medicine supported by people as groups rather than individuals. Upon careful examination of this definition it is clearly seen that socialized medicine is not new, and that the statement organized medicine stands steadfastly opposed to all forms of socialized medicine, is untrue. State-supported hospitals for tuberculosis, care of the insane, and crippled children clinics fall under this general classification. These and other forms of socialized medicine have the support and approval of the medical profession.

Some of the more common plans or types of socialized medicine being propounded today through

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press, radio and from the public platform, are: state medicine, group health associations, group hospitalization, compulsory health insurance, and medical indemnity insurance. These plans cannot be dismissed as wholly good or uniformly bad. That they all have direct bearing on future medical legislation can not be denied and for that reason they merit careful analysis. It is not within the scope of this paper to evaluate these plans. However, it might be well in order to clear up some of the confusion, to define each plan and state organized medicine's attitude in regard to each.

State medicine is that form of socialized medicine under which medical services are furnished directly by government employees, who are paid out of tax funds, much as public education is furnished by teachers employed by the government and paid out of public funds. Organized medicine is opposed to any system that so plainly opens the door to lay supervision and interference.

In group health associations, groups of persons form a corporation and hire several doctors on a salary basis to provide their continuing medical needs. Individuals in the group pay a fixed sum per month. They have to take doctors whom their officers select for them. The American Medical Association in a report prepared by the Bureau of Economics pronounced this "contract practice with limitation of free choice and the added vice of being corporate practice of medicine." They feel that group health associations create conditions which tend to lower the quality of medicine given. It was the American Medical Association's opposition to this plan which lead to the indictment of that organization in Washington, D. C., December, 1938, under the Sherman Anti-Trust Law.

In speaking of group health associations there is a tendency to confuse it with group practice, which is not a form of socialized medicine. Group practice refers to "three or more physicians who have joined for practice and who own certain kinds of equipment aside from office space, and employ lay assistants in common." Group practice does not necessitate "group payment" of bills, therefore, it can not be classified under socialized medicine, and has no place in this discussion.

Group hospitalization is a plan by which large numbers of individuals make equal and regular payments into a common fund to be used for the purchase of hospital service. It is a modified form of health insurance applied only to hospital expenses.

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It does not include the doctors' fees. This plan has found favor with the medical profession and will continue to find favor as long as it remains local in scope and permits the free choice of established hospitals.

Compulsory health insurance is a form of socialized medicine under which the individual is compelled to pay in advance a stipulated sum of money to guarantee payment of the costs of medical and hospital care in the event of illness. Deductions are made by law from the pay envelope of the workman. The employer also is forced to contribute to these advance payments and the state pays a portion of the expense. The same objection arises here that arises in state medicine, for in effect this is state medicine. The word compulsory means that the state will have to collect and hence control the operation. This system forces a man to pay into funds according to his income rather than according to his need for medical services. While it presumes to cover everyone, in practice it covers only industrial workers and does not take into account independent workers such as shop keepers, professional men, and farmers.

Medical indemnity insurance is simply a plan by which principles of insurance are applied to doctors' bills, allowing any insured patient to obtain services of the doctor of his choice. It supplies the cash with which the doctor is paid, but not medical service itself to the patient. This plan has found some favor with the medical profession.

That these various plans are influencing legislation is evidenced by the introduction of the Wagner Bill in Congress last May. It authorizes Federal appropriation to match state outlays for maternal and child care, construction of new hospitals, extension of public health services and medical treatment of the economically handicapped, and workers' compensation for loss of wages through illness. The American Medical Association generally recognizes the stated objectives in the bill as desirable but does not approve of the methods by which these objectives are to be attained. On the face of it the Wagner Bill does not provide for compulsory health insurance. It leaves such a matter to the discretion of the individual states. They must decide whether to adopt insurance or set up a system of state medicine supported by taxation; if they fail to decide they must do without liberal grants-in-aid from the Federal Government. It presents a temptation to establish state medicine or compulsory health insurance which any state would find diffi-

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cult to resist. At the West Virginia State Medical Association's Convention at White Sulphur Springs last June, a resolution was passed in the House of Delegates condemning the Wagner Bill in toto.

On January 30, 1940 the president sent a message to congress advocating the construction of hospitals in needy areas. Following the receipt of this message, Senator Wagner introduced Senate Bill 3230 "to promote the national health and welfare through appropriation of funds for the construction of hospitals", which was referred to the Senate Committee on Education and Labor. A companion bill was introduced in the House of Representatives, H. R. 8240 which was referred to the House Committee on Interstate and Foreign Commerce. This bill calls for an appropriation of $10,000,000 for the erection and equipment of small hospitals for poor communities throughout the United States in which need for such facilities is greatest. Last December when the president first mentioned a hospital construction plan he was vigorously supported by the American Medical Association. Whether or not the bill as presented is acceptable to that organization can not be said at this time.

Senator Mead of New York, also presented a bill on February 1, authorizing loans for hospitals, water, sewer, stream pollution control, and related projects and facilities. He stated that this bill did not conflict with the bill introduced by Senator Wagner but "will supplement the program he proposes, and it will permit applicants who otherwise would not be permitted to apply for funds for this purpose to qualify and, in the end, to build hospital facilities." This bill will require further study before it can be endorsed by the American Medical Association. The term, "related projects and facilities" is vague and needs illumination.

To be well informed on health legislation every auxiliary member should thoroughly acquaint herself with these programs. Study them from the standpoint of immediate background, aims and purposes, classes and percentage of population most affected. Know how each plan expects to attain its objectives. Information concerning study material will be gladly furnished you by your state legislative chairman.

Auxiliary members are interested in many lay organizations which look toward advancement of health education. Through these organizations the Woman's Auxiliary can influence a wide section of the voting public.—MRS. GEORGE F. EVANS.

Directory of Physicians in Limited Practice

Advertising space in the directory of physicians in limited practice can be had by communicating with Mr. Joe W. Savage, Secretary-Manager of the West Virginia Medical Journal, Box 787, Charleston, W. Va. The cost is one dollar per month. Space may be had only by members of the West Virginia State Medical Association.

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THE FUNCTION OF JOINTS IN RELATION TO FRACTURE TREATMENT*

By ROBERT H. KENNEDY, M. D.
New York City, New York

Our aim in the treatment of fractures is to obtain solid union, with normal length, in a proper axis and with a complete restoration of normal function, all in a minimum of time. We are considering here the last of these aims only—restoration of function.

Up to twenty-five years ago function was given comparatively little consideration in fracture treatment. It was common practice to immobilize a portion of the body in plaster and give the patient little further consideration until it was thought time to remove the plaster several months later. The public took for granted that a broken bone would mean some extent of disability or deformity for life and most of the medical profession seemed to acquiesce in this. Occasional hardy souls, such as Lucas - Champonniere, tried to give more consideration to function, but their ideas were not generally adopted.

With the advent of common usage of the x-ray, doctors, victims, and the courts could have a better idea of what had happened to the bone. A demand arose for more consideration of anatomical position. The adoption of workmen's compensation laws, with the presentation of x-ray films before referees, also made the doctor more self-conscious about the anatomical result he was obtaining. This was one of the reasons for the increasing popularity of open reduction before the World War.

Then it became evident that, even though fragments healed in quite normal position, the late result as far as use of a limb was often far from that desired. On the other hand, healing with severe bony deformity often allowed of function remarkably close to normal. It became apparent that consid-

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eration must be given to both anatomy and physiology at the same time if the result were to approach the ideal.

The orthopedic surgeon has generally been more interested in functional use of joints than has the general surgeon. I believe this has much to do with the transfer of treatment of the more difficult fractures to the orthopedic, rather than the general surgical field, in the past twenty-five years in many parts of the country. However, as the orthopedic surgeon has treated more fractures, I have the feeling that his consideration of function has often decreased. At least it is well to call it to his attention frequently.

TREATMENT BY GENERAL PRACTITIONERS

Fractures are, and always will be, treated chiefly by the general practitioner in the country as a whole. This is as it should be. However, we should try to educate the general man as to what types of fractures usually require a more specialized experience. Then he will obtain consultations on these in the early days instead of waiting, as is so common now, until a poor result is well on its way. We also need to keep the family doctor informed of advances in fracture treatment, so that he may put these to use in that great majority of cases which he can treat as well or better than anyone else. In this regard we need to stress constantly consideration of joint function.

In the breaking of practically every bone there is accompanying injury of the soft parts —ligaments, muscles, blood vessels, nerves, or skin, singly or even all combined. The extent of this soft part injury has much influence on the ultimate joint function. Too commonly we regard only the bony lesion at the time of injury and neglect treatment of the soft parts. In a fracture of the upper extremity of the fibula has the peroneal nerve been involved? We should determine this immediately after accident and not have a foot drop brought to our attention after plaster has been removed. Then we cannot be certain whether the injury was a part of the original trauma or was a result of plaster pressure over the upper portion of the fibula. In a fracture of the external malleolus have we missed a slight widening of the space between the tibia and fibula, which should have meant to us an accompanying tearing of tibiofibular ligament? Later we are surprised at the lack of stability of the ankle joint in what we had thought to be a rather simple injury. Diagnosis and treatment of soft part injury is a definite factor in joint function.

Immediate care of fractures is necessary. These are emergency cases and should be attended to as such. Transportation from the place of injury in fixed traction decreases the amount of blood and fluid extravasation into the tissues, prevents further soft part injury and diminishes shock so that it is possible to give definitive treatment earlier. Arrangements should be made in every community so that fixed traction is available for application by laymen.

Early determination of whether reduction is necessary, and early reduction, if found necessary, are both important for joint function. Nature commences her attempt at repair immediately. Every hour of delay before reduction means undoing more of her attempted work with greater extravasation of fluid. It means that more forceful efforts will be required, often resulting in increased soft part injury. Delaying reduction until swelling has subsided is inexcusable. The quickest method of reducing swelling is to reduce the fracture.

USE OF ANESTHESIA

If a reduction is worth doing it should be done under anesthesia. The object of reduction is to obtain as perfect anatomic position as possible. The reason for anesthesia, in this instance, is not to abolish pain but to obtain complete muscular relaxation, so that we may have the best opportunity to obtain perfect anatomical reposition. Because a patient can stand the pain is no excuse for allowing fractures to be reduced without anesthesia. It is far better to allow an extremity to remain in fixed traction a few hours longer than to reduce before anesthesia can be ob-

tained. With complete relaxation less trauma occurs during reduction and better anatomical position can be obtained, both resulting in expectation of better ultimate joint function.

Manipulation should always be gentle with the joints in the position of greatest muscle relaxation. To reduce a fracture of both bones of the leg with the whole lower extremity in extension shows a lack of knowledge of first principles of mechanics. Right-angled flexion of the knee during reduction allows the use of considerably less force.

TO MAINTAIN REDUCTION

Having obtained reduction early under anesthesia with gentle manipulation, some means of maintaining reduction is the next consideration. As far as possible this should be accomplished in a position of rest to obtain the best joint function. The use of Russell traction in fractures of the shaft of the femur is an excellent example. With maintenance usually of 20 degrees flexion at the hip, 20 degrees flexion at the knee and no support of the foot, the function at these joints on removing the apparatus is uniformly better than I have ever seen with immobilization in plaster or with skeletal traction, however much continued joint function has been attempted through employment of the Pierson leg piece. I believe this is due to muscle balance in a position of rest. At the ankle joint a position of right angle flexion is desirable since the posterior muscles are so much stronger than the anterior group. To allow maintenance in plaster of a foot drop, position will frequently entail months of effort before ankle function will return to normal. On the other hand maintenance of the commonly advised marked inversion of the foot which is an uncomfortable abnormal position frequently results in prolonged weak foot and pain. In many instances the position of rest cannot be used on account of other factors which we shall discuss under individual fractures.

In instances where the injury has been such that we expect diminished joint function, or where arthritis preexists, it is often best to immobilize in the position of greatest utility in case of loss of function, *e.g.*, maintenance of a wrist joint in 15 to 20 degrees dorsiflexion, maintenance of an elbow in a position where the hand can be inserted into the trouser pocket.

The extent of immobilizing apparatus should be no greater and no less than is absolutely necessary. The diminished finger joint function after a Colles' fracture is of much more gravity usually than is the loss at the wrist joint. One common reason for this loss is because the splint extends too far distally. One should always make certain that, from the start, complete flexion at all metacarpophalangeal joints is possible, *i.e.*, that the splint can be grasped strongly with the fingers with 90 degrees flexion at the metacarpophalangeal joints. Do not neglect to tell the patient to move his fingers all he can. A fracture at the junction of the middle and lower thirds of the shaft of both bones of the leg needs immobilization of the knee joint. If not immobilized, not only is the chance of delayed union greatly increased, but from lack of immobilization of muscles arising at the knee which pass by the fracture site with resulting discomfort, the return of normal joint function at the knee is further delayed.

TRACTION THROUGH BONE

In the same way traction, if possible, should pull through the bone involved, rather than through one or more joints distal to the site of fracture. For fracture of a metacarpal, traction through the metacarpal is much to be preferred over traction through any phalanx, and traction through the proximal phalanx to traction through the distal phalanx. We now believe that finger traction with a banjo splint should rarely be used. For fractures of the femur, wire inserted through the distal fragment of the femur is preferred to skeletal traction through the tubercle of the tibia. I have seen prolonged lack of stability of a knee many times following prolonged pull through the ligaments of the knee joint.

Immobilization whether in plaster or in traction should be prolonged only as long as is necessary to obtain solid union. To continue it longer only adds to the loss of muscle function with greater retardation of joint use. On the other hand, not to immobilize until union has progressed to such a point that motion does not cause pain, will still further diminish function due to the pain reflex with protective spasm. Children tolerate more prolonged immobilization of joints with return of perfect function than do adults or the aged.

MOTIONS OF SHOULDER JOINT

Abduction, external and internal rotation at the shoulder are three important motions of this joint. It is frequent to find marked loss of these functions for months after an arm has been carried in a sling for a forearm or elbow fracture or for an infection. Unless contraindicated all persons using a sling should be directed how to go through all the different motions at the shoulder joint several times a day. Otherwise the loss of function at the shoulder joint is liable to cause more prolonged disability than that near the site of injury.

Swelling distal to the site of fracture is a usual occurrence, unless reduction and immobilization have been immediate. This should be combated in every possible way, since otherwise it will result in periarticular and peritendinous adhesions with diminished function. Prevention by immediate traction and early reduction and fixation is the most important factor. Elevation comes next, whether edema is present or not. Heat and superficial sedative massage will help rid the part of the products of injury and the reaction to it. Active motion of all neighboring parts, not actually immobilized, commenced on the day of injury is also of tremendous value in preventing and diminishing edema and preserving joint function. Attempts at muscular contraction within plaster or the use of the Bristow or Smart apparatus for mild graduated contractions also help. Once periarticular adhesions have formed, some extent of permanent loss of joint function will usually result in spite of any form of treatment.

Up to this point I have considered joint function in relation to general fracture treatment. I now wish to discuss a few fractures which involve the joints themselves. A smooth articular surface conforming to the shape of the opposing surface is absolutely necessary for perfect joint function. We cannot expect this unless we are able to obtain perfect realignment in our reduction. Open reduction is frequently advisable in order to obtain correct replacement. We are never certain of the extent of cartilage injury so that even with perfect reposition there is a possibility of later arthritis or osteitis, particularly in the weight-bearing limb. Longer immobilization is frequently required if the fracture line enters the joint in order to preserve the proper relation of the fragments within the joint and to prevent the throwing out of excess callus into the joint. With evident fluid in the joint, aspiration should be performed more frequently. A hemarthrosis will usually be found. Removal of the blood and synovial fluid gives a better opportunity for approximation of fragments, helps to prevent organization of the fluid within the joint with resultant adhesions and prevents continued stretching of the ligaments which might result in lack of stability of the joint later.

COLLES' FRACTURE

Colles' fracture is one of the most frequent, most disabling and most poorly treated fractures. Large statistics show a loss of at least 20 to 30 per cent in joint function on the average. It is rare to see a patient with perfect function after this lesion. Typically, of course, the fracture line does not enter the joint, but the major difficulty in its treatment concerns joints. In reduction the most important factor is to obtain a normal anterior facing of 10 to 15 degrees of the distal articular surface of the radius. This is impossible unless the impaction is broken up. When this is done, one usually finds considerable com-

minution of the posterior, and little if any of the anterior, aspect. It is for this reason that flexion of the carpus on the forearm is the necessary position of immobilization. This allows the posterior aspect to be on the stretch during healing. Otherwise, as bone absorption takes place, the distal fragment will angulate backward and the articular surface will face posteriorly with persistent irremediable disability as a result. Particularly in elderly people it is frequently necessary to continue immobilization in the flexed position for six to eight weeks. The next most important consideration in Colles' fracture is the inferior radioulnar articulation. This is of course almost invariably dislocated. Unless this is completely reduced, which again means complete breaking up of the impaction, arthritis with persistent pain and diminished pronation and supination will result. Ulnar adduction is the position of choice for immobilization to maintain reduction of the dislocation. It is nothing to boast of that you make a practice of removing splints from your Colles' fracture in a week or ten days. In many instances this is too early.

FRACTURES OF HEAD OF RADIUS

Fractures of the head of the radius involve the superior radioulnar joint. If there is no displacement I believe a sling only should be applied and that active motion should be encouraged from the first. If a V-shaped fragment is displaced so that in any position of rotation it would be opposite the radial notch on the ulna, this fragment should be removed and active motion started immediately. If the fracture is through the neck, with displacement of the head, the fragment and the neck down almost to the bicipital tuberosity should be removed early, except in children. Active motion should be started immediately. If not removed early, the disability usually increases as times goes on and is less relieved by late removal. In children an attempt should be made to replace the head within the orbicular ligament. Removal will result in an unsightly increased carrying angle with lack of growth of the radius.

Fractures of the capitellum or trochlea, with or without some of the condyle, are frequently rotated within the joint. Unless it is possible to reduce the rotation by closed method, which is uncommon, an open operation with accurate reduction of the joint line is always indicated. Unfortunately the rotation of the articular surface is frequently overlooked in the x-ray.

Much has been written about fractures of the upper extremity of the tibia, involving the condyles. A number of ingenious operations have been devised to raise the depressed articular surface of one condyle. I believe most of them are unnecessary. Impaction is commonly characteristic of these lesions. My usual treatment is to aspirate the joint, repeatedly if necessary, elevate the thigh on a gatch bed with the knee flexed, use local heat after the first 24 hours and encourage active motion through whatever range does not cause pain. The patient is allowed out of bed as soon as fluid no longer recurs. Weight-bearing is not allowed before twelve weeks, at which time a hinged-knee support is often applied also. There is no early immobilization or bandaging except possibly for a few days to help prevent the recurrence of fluid. The results are amazingly good and I have not yet felt required to operate on one. However, some do require an operation later for semilunar cartilage injury with its resultant symptoms.

For lateral stability of the ankle joint, it is necessary that the external and internal malleoli with their ligaments shall grip the astragalus quite closely. This is often forgotten in the examination of the x-ray films following reduction of fractures about the ankle joint. The bones appear in good position and we neglect to notice that the mortise is widened, which will result in a poorly functioning ankle. It may be due to a tipping outward or slight lateral displacement of the external malleolus or the reverse positions of the internal malleolus or to a tearing of the tibiofibular ligaments. Further correction should always be done.

Another important observation to be made in ankle fractures is that the median longitudinal axis of the tibia should pass through the median line of the astragalus. If it falls to the inner or outer side a poor functioning ankle joint will result.

The results after fractures of the tarsus and metatarsus are notoriously unsatisfactory. This is due to lack of proper reduction, which is often extremely difficult, resulting in arthritis and disturbance of arch support. Skeletal traction through metatarsals and phalanges is much safer than in the hand and often results in surprisingly satisfactory reductions. These lesions should be treated more actively than with the methods at present in vogue, which are largely immobilization in the position found.

PHYSICAL THERAPY

You will note that it has taken me a long time to reach the subject of physical therapy in relation to joint function. I believe it should. As ordinarily employed, I believe it is far overrated in fracture therapy. Above everything it requires the personal attention and supervision of the one attending the fracture. One has no right to order physical therapy and let some one else carry out what they see fit.

Elevation and heat we have mentioned already. Both are employed for 24 hours a day when used in hospital patients. Passive motion has no place in fractures, at least until union is solid. Then it should not be necessary if active motion has been kept up during treatment as far as possible. Guided active motion is always many times more effective than passive motion. Physical therapy has no place in the treatment of fractures in children. Diathermy and short wave therapy have no place in the treatment of the fracture *per se*, but often cause excellent response in joints away from the immediate site of fracture. So-called breaking up adhesions in joints is almost invariably contraindicated. The condition a week afterward is usually worse than before it is done. Do not be driven into it, but advise against it whenever you have the opportunity. Occupational therapy is one of the most valuable remedies known for disturbed joint function. For some years at the Beekman Street Hospital calisthenics to the accompaniment of music have been conducted by a physical therapist every afternoon on the fracture ward. All parts of the body are exercised except those actually immobilized in that individual. We believe this improves general joint function considerably.

SUPPORT FOR SOFT PARTS

We often forget that in a lower extremity fracture the soft parts need support when splints are removed or weight-bearing commenced. With marked swelling we cannot expect improvement in joint function. An Ace bandage, Unna boot or adhesive plaster ankle strapping are commonly necessary. An arch support and an inner riser on the heel should usually be ordered when weight-bearing is commenced after a considerable lapse of time, particularly in lower leg and ankle fractures.

After a severe fracture into a joint arthrodesis is usually preferable to a painful joint with only slight motion.

The measurement of joint function in actual angles should be a part of our records in all fracture cases. We may have the impression of no, or considerable, improvement and the records may show that the reverse is true. Treatment of joint function in late cases should not be continued when there has been no improvement over several weeks.

The functional utility of a limb is a good measure of the success or failure of our treatment of a fracture. It has been said that "the power to recover function, the use of muscles and joints, is the property of the patient's will" (Scudder, eleventh edition). But we cannot be satisfied to leave the care of return of function entirely to the patient. The greater the cooperation he gives us, the more satisfactory will be his recovery. But we have to point the way from the day the fracture occurs.

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THE ROLE OF PSYCHIATRY IN PEDIATRICS

By JACK BASMAN, M. D.
Charleston, West Virginia

EVERYONE accepts the pediatrician as the general practitioner of childhood. Pediatrics has been defined by Veeder as "that branch of the medical sciences which has to do with factors influencing the growth and development of individuals from birth to maturity," but pediatricians have, in the past, limited their attention principally to the child's physical development—to heart, lungs, kidneys, weight, and body fluids—and have ignored the interesting problems of the child as a behaving or misbehaving personality. They have avoided in teaching schedules and in clinical practice, the emotional and personality problems of childhood.

In the study of the child at any given moment, we are dealing with every experience the child has had previously in a genetic-dynamic relationship. In the words of Tennyson's "Ulysses", it is literally true that "we are a part of all that we have met." The psychiatrist has no short cut and but few instruments of precision at his disposal in dealing with behavior problems. The child is brought to the physician's attention with a complaint, which varies from an exanthematous condition, otitis media, whooping cough, lesion of the skin, to constant blinking of the eyes.

Having obtained the complaint, we proceed to develop the story, reconstructing the setting in which the difficulty arose, tracing its development from its onset to the present time, and particularly noting its effect upon the individual and his environment. In short, we approach the problem as we would any that challenges us in the scientific world, by ascertaining the conditions under which it develops, the predisposing factors, their work or course, and the results to which they have given rise.

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In addition, a personal history is taken with emphasis on the personality make-up of the child, his characteristic performance, parent-child relationships, school and group behavior, and the like, as well as the physical factors. The family history completes the indirect examination. The examination is directed towards four salient points: (1) home, (2) school, (3) church, (4) neighborhood environment.

The direct examination of the child consists of the usual routine, complete physical studies including indicated contributory examinations, that is, laboratory, x-ray, etc., mental measurements, and the so-called psychiatric examination, in which special emphasis is placed on the child's emotional life and habits as well as on the various features of his environment and their possible direct or indirect connection with the difficulty to be treated. Here we are dealing to a large extent with interpersonal relationships between parents, teachers, and the child.

In the consideration of a child, we wish to ascertain (1) the conditions that gave rise to the complaint, (2) the predisposing factors, (3) their working course, (4) their results, and (5) the modifiability of the whole. It is always the child, as a person, that we wish to treat, not merely his tics, enuresis, temper tantrums, or fears, as diseases or symptoms. The therapeutic program depends on the completeness of the direct, indirect, and contributory examinations, with the conclusions

we have drawn from them and what we have recognized to be the child's personality assets and liabilities.

When psychiatric outlook was attempted at a children's hospital, it was suggested that the pediatricians send the cases to the child psychiatrist with the various symptoms. It is interesting to note what happened under the circumstances. Among the first one thousand cases selected by the pediatricians for psychiatric consultation, the leading complaints or reasons for referral were as follows: (Often there were two or more leading complaints in the same case.)

Poor progress or conduct at school	315
Enuresis	256
Food and pica	222
Temper tantrums	217
Nail biting	163
Restlessness	154
Fear reactions	153
Problems of epileptic children	142
Spoiled child reaction	126
Speech difficulties	124
Tics	75
Hypochondriac trends	72
Psychogenic headaches	68
Sleep disturbances	65
Sex problems	63
Psychogenic vomiting	54
Thumb sucking	36
Crying spells	34
Stealing	29
Encopresis	26
Psychogenic constipation	24
Disobedience	22
Breath holding spells	21
Lying	21

They represented a cross-section of the problems which the pediatrician meets in his daily practice.

The growing individual is in a more pliable, impressionable, suggestible, motifiable, and trainable state than one who has approached or reached maturity. When a child is found to be handicapped at the very start we nowadays have means at our disposal either to correct the existing defect or if this is not possible to steer the handicapped youngster into that type of useful existence which will make the best possible use of whatever assets he may possess.

The fact that a child is blind, crippled, feebleminded, or delinquent is no longer any excuse for shoulder-shrugging inactivity. For example, nodding spasms and breath-holding spells are rarely observed after the third year of life. Intelligent handling of children's behavior difficulties is not thinkable without a knowledge and understanding of the individual patient whom we are called upon to help.

The principles of psychiatric treatment require a number of well-defined steps.

(1) WORK WITH THE CHILD

We aim to set up the patient in a condition of well-being as an ideal preparation for successful treatment. We can, of course, cure his bed-wetting even though his teeth are decayed, but the job has not been a complete one unless the teeth, too, are successfully treated. It is necessary to establish a spirit of cooperation with the child. We must create in him confidence in ourselves as his advisor as well as self-confidence in his own ability to overcome his disorder. The child must understand that both the parents and the doctor consider his ailments serious. We should avoid discussing or giving the parents an opportunity to discuss him in his presence as if he were a piece of furniture.

(2) WORK WITH THE FAMILY

We must concentrate our endeavors on the parents with whom he is in constant close contact, whose cooperation or lack of cooperation spells success or failure of any treatment. The existing problem must be formulated to the parents freely, tactfully, and in simple and understandable everyday language. The treatment should be planned with the parents and not dictated to them as they are entitled to know why certain recommendations are made. It is unwise to blame parents for what they have done or omitted. It is far better to speak calmly of the complaint, an approach which will secure better results. Never should one parent be played against the other.

(3) WORK WITH THE COMMUNITY

There are many cases in which work with the child and the family are not sufficient and at these times a change of environment is extremely helpful; that is, removal from the home for awhile.

(4) FOLLOW-UP WORK

The initial program is often only the beginning of the treatment which must be kept up by a well-planned routine.

It would be impossible to even mention all the psychopathic disorders of childhood. For this reason I will omit many and discuss a few points concerning the emotional disorders.

(A) Temper Tantrums: This is the most common emotional disturbance of childhood. The youngster works himself into a rage in which he may yell, stamp his feet, break everything on the floor, bite, etc. This may be precipitated by a failure of the family to instantly comply with the child's wants. Tantrums are often copied by the patient from other members of the family. Faulty habit training is a prominent factor. The youngster learns to use his tantrums as a means of obtaining his wants and dominating the family. The individual outbursts should be met with calmness, firmness, and he should learn that he will not obtain his wants through the medium of tantrums. It is downright harmful to react to the tantrum with emotional scenes, whipping, and cold water.

(B) Fears: The normal, well-trained child is not fearful. A child's fear of thunder storms can almost invariably be traced to a member of the household. The custom of frightening youngsters into obedience by threatening them is entirely erroneous. The treatment is directed towards the correction of faulty notions and practices.

(C) Anxiety Attacks: These occur usually at night and are characterized by sudden terror and fear of death. They usually occur after some dramatic experience of an exciting nature.

(D) Jealousy Reactions: The two main sources of the arousal of jealousy behavior in children are the arrival of a new baby and the contrasting of siblings with one another. A child should be prepared for the coming of the new member of the family.

(E) Anti-social Trends: Disobedience is often the result of parental inconsistency based on thoughtlessness, dissension with regard to the child's training or undue sternness. Lying originates in three types of situations: (1) self-defense, (2) imitation of adult behavior, (3) the desire to receive the attention and admiration of playmates.

(F) Lack of Appetite: The faulty habits of eating are the result of and maintained by parental mismanagement. The child is made to occupy the center of attention in the home. There is hardly a better opportunity for that than during the customary three meals when the whole family is assembled at a dining table. "The scene is rendered as dramatic as possible by constant instructions, warnings, threats, comparison with others, coaxing, pleading, punishing, bribing and timing. Many persons are thought up, from father to the president of the United States for whom the child should take another spoonful. Stories are read or told. The piano is played, bells are rung, father makes faces, mother wrings her hands in despair, and the child in turn whines, screams, fights, vomits, and thoroughly enjoys the entire performance." The child must learn that the parents' part consists solely of providing food. It is best to put the food before the youngster at a regular meal time and then show no further interest in him. After a reasonable time the dishes should be calmly removed and no nourishment given between meals. There has never been a case reported of a normal child starving to death. The main purpose is to have the child derive as much pleasure from refusing to be satisfied with small amounts as he would derive previously from accepting any food at all. When the child begins to ask for larger portions the battle is won.

OTHER DISTURBANCES

There are many other disturbances such as masturbation, nightmares, sleep walking, thumb sucking, nail biting, bed wetting, breath holding spells, and fainting spells which are successfully treated by a psychiatric approach.

In conclusion allow me to emphasize the following points:

(1) The pediatrician should be the main factor in the field of prevention and treatment of behavior problems in childhood.

(2) The accent in child psychiatry has shifted as it has in medicine from treatment to prevention.

(3) Inability to make adjustments brings about behavior problems and various forms of so-called nervousness.

(4) Treatment is first of all prophylactic.

(5) The child must be investigated as a living being and not as a series of parts.

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Medical Arts Bldg.

WHAT MAY BE SEEN IN THE EYES*

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An old doctrine teaches that our eye reflects faithfully whatever there may be of illness, present or past, in our entire organism. Each structure, each organ, each member of the body is said by the older writers to be represented on the iris by minute and clearly limited areas, wherein the details of structure and the peculiarities of pigmentation respond mysteriously to morbid influences from various parts of the body. And so they held that for one who was familiar with this rather special topographical anatomy it was easy to diagnose say, an enlargement of the liver.

When I attempt to tell you in this paper "what may be seen in the eyes," it is not because I have become a master of this fanciful iriscopy, the strange success of which may be explained by the popular idea that the eye is a mirror revealing all sorts of more or less intimate things.

Ophthalmology appears to be a strictly limited and highly specialized province of medicine. Does it not deal with the study of a highly differentiated and a very complicated organ? And has it not its own method of investigation, its pathology and its particular therapy, a vocabulary of technical terms which seem calculated to guarantee its existence?

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The relations between the eye and the body as a whole are as diverse as they are numerous. Von Graefe, who was known as the father of ophthalmology always insisted that to be a good oculist, one must possess a solid knowledge of general medicine. Today one can say that as far as ophthalmology and other specialties are concerned, they are following the movement back toward general medicine and its fundamental problems, and that the relationships between the eye and the body will be richer, more numerous and more intimate.

The complete and systematic investigation of the visual apparatus includes two types of examination: the so-called objective examination which is concerned with the visible portion of the apparatus, the eyeball itself, and secondly the subjective examination which

*Read before the Staff of the North Wheeling Hospital, Wheeling, West Virginia.

considers the information furnished by the patient himself. In practice these two are intimately connected.

In a paper of this type, one naturally limits oneself to the objective examination of the ocular globe, since the great majority of important ocular signs are seen in the eyes themselves.

POSITIONS OF EYEBALL

The eyeball presents to us from this point of view three quite distinct portions:

(A) The anterior segment of the globe which is also called the sclerotic-corneal coat, comprising the part of the eyeball visible to the naked eye; the sclera covered by its conjunctiva, the cornea, the anterior chamber, the iris, and anterior surface of the crystalline lens visible in the pupillary aperture.

(B) The transparent media of the globe which includes: the retina, the cornea, the aqueous humor which fills the anterior chamber, the crystalline lens, and the important mass of the vitreous body. The visibility of the two posterior optic media depends on the size of the aperture of the pupillary orifice.

(C) The fundus of the eye composed of the so-called deep membranes, choroid and retina, which present in the center of their concavity two important formations, the macula and the disc of the optic nerve, both of whose equatorial and peripheral zones merit our closest attention.

For each of these portions of the eyeball there is a corresponding particular process of examination:

(a) The anterior segment is accessible to direct inspection by diffuse daylight, the only illumination which permits the appreciation of the slightest change in coloration of the white of the eye and the iris. The method of choice, for the examination of the anterior coat of the globe is oblique, or better still, focal illumination. By means of a slit lamp or a corneal microscope we are now able to make a microscopic study of the living eye.

(b) Coming now to the transparent media, the cornea, crystalline lens and vitreous, these likewise can be studied by the slit lamp, and also by a flat perforated mirror.

(c) The fundus of the eye is visible with the aid of the ophthalmoscope. This instrument invented three-fourths of a century ago by Helmholtz is really the basis of ophthalmological science.

This brings us to the relations of the eye and the visual apparatus with the general organism. Although these relations are both many and complex they may be grouped under two large heads: (1) the nervous connections, (2) the circulatory connections.

1. The nervous connection. Well may it be said that the eye forms an integral part of the central nervous system. We must remember that the optic nerve is nothing more than a prolongation of the cerebral substance itself, an anterior expansion of the brain. The retina, the optic fibres which issue from it, and which, as they reunite, form the optic nerve and the vascular plexus which nourishes them, all these things which the ophthalmoscope allows us to view directly are, in fact, a part of the brain.

In order to form an integral part of the central nervous system as well as a sensory organ of vision, the eye must possess just as complete a peripheral innervation. Consider the fact that including the optic nerve, of the twelve pair of cranial nerves, there are no less than six which are concerned with the eyeball, either exclusively or accessorily. The movements of the eye, which give to the glance its marvelous motility, and the intimate mechanism of which confounds or perplexes the imagination, are governed by three absolutely specialized nerves, the facial, the trigeminal, and the cervical sympathetic.

MOTOR DISTURBANCES

Motor disturbances of the eye play a vast part in nervous pathology. Spasms and paralysis of eye muscles can be duly recognized. Pupillary disturbances, mydriasis, miosis and inequality, are frequently encountered and are early warning signs.

The daily practice of examination of refraction causes us to observe and study the

marvelous function of accommodation combined with convergence, by means of which the two eyes are enabled to focus on an object as it is brought nearer to them. In the books, accommodation is a mechanical process or function, well regulated, very well behaved which grows progressively weak and feeble with age, ending in what we call presbyopia. In the living man, accommodation is all of that and more, a function mobile, unstable, often unregulated, many times fantastic like the disposition of nervous people, sensitive to depressing psychic influences, a true barometer of psychic forces.

To those particularly anxious patients who ask, "Doctor, what have you seen in my eyes" we are secure and safe in answering, "What may be seen in your eyes, is that you not only need glasses, but that you need peace, rest and repose." The eye, remember, is a mirror which reveals to the ophthalmologist all hidden pain and anguish. The prescription for glasses is a matter of optics and psychology.

CIRCULATORY CONNECTIONS

Let us see now the circulatory connections of the eye and the general organism. Here again the eye must be considered as forming a part of the brain. The vascular plexus of the retina visible to the ophthalmoscope is properly a cerebral plexus. The central artery of the retina is a terminal artery without anastomoses, exactly like the cerebral arteries. An arterial obstruction, by thrombus or embolus, provokes in the eye as in the brain, extremely serious functional disturbances. This identity between the retinal arteries and cerebral arteries is a fact of highest importance. An examination with the ophthalmoscope of the trunk and branches of the central artery of the retina in regard to their calibre and the condition of their walls is equivalent to an examination of the cerebral arteries. One may conceive from this the importance in vascular pathology of what can be seen in the eyes.

Arteriosclerosis seems to have a predilection for certain organs, the kidneys, for example, and the brain. The significance of hard temporal or radials arteries are gross pictures, indeed, compared to the finding of an arteriole of the retina and hence of the brain which shows areas of sclerosis comparable to tiny fragments of egg shell applied to it, or of another arteriole in which the blood column is in fragments, or of still another branch which is transformed, in part or even over its entire course, into a thick white thread. All of these signs are of value not only to the ophthalmologist, but also to the practitioner who will incorporate them in his clinical picture of his patient. Retinal hemorrhages and albuminuric retinitis are retinal signs appearing in the course of a nephritis, and have a special diagnostic value.

Besides the vascular plexus of the retina, there is in the eye another vascular system represented not merely by a terminal branch but by an entire ocular membrane, the uvea, placed like a relatively thick felt between the sclerotic or fibrous coat and the retina.

The uvea is called, at the plexus of the posterior hemisphere, the choroid. In front it forms the iris. Between the choroid and iris we find the so-called ciliary region, the mysterious seat of functions so important that we are led to consider them the heart of the eye. Choroid, ciliary body, iris—this organic ensemble which is called the uvea, plays in ocular pathology a rôle of first rank, and is the articulation between local ocular pathology and the pathology of the general organism.

INFLAMMATION

Every inflammation of the uvea, choroiditis, cyclitis, iridocyclitis, iritis, is a general disease. The uvea is like a sponge which imbibes of every sort of poison carried in by the blood stream. Uveitis appears most frequently in the exudative form. You can imagine what happens to the resiliency of the eye and to the visual function when the optic media are covered with film and opaque cellular elements. Take, for example, chronic uveitis which is most prevalent among women. We appeal to the general man to find the cause.

Tuberculosis? Syphilis? Endocrine disturbance? Ovarian dysfunction? Teeth? Sinuses?

Then again there are certain idiopathic diseases peculiar to the organ of vision and of interest only to the ophthalmologist, such as cataract, glaucoma and detachment of the retina. Cataracts are of many varieties; one theory holds that the opacity of the crystalline lens is a result of a disturbance in the balance of the internal secretions. The glaucomatous syndrome has become, in recent years, a problem of general biology. Detachment of the retina is due to a rent in the retina produced by a pathologic adhesion. Some of its causes are trauma, inflammation, new growths, and myopia and diseases of the retina and choroid.

Constitutional diseases, chronic diatheses and nutritional disturbances bring about a long category of ocular affections which are the daily bread of our ophthalmological practice, and are often more difficult to take care of and to cure than many a more serious disease. I refer to blepharitis, chronic conjunctivitis and recurrent keratitis.

In conclusion, it may be seen that the relation between the eyes and the remainder of the body is an extremely complex subject which I have dealt with rather incompletely. However, if it is true, as has been said, that it is on the borders of sciences that discoveries are made, then one may expect great things from this relation of ophthalmology and general medicine, which is asserting itself in the best work of the present day.

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PROGRESS IN ORTHOPEDIC SURGERY WITH A DISCUSSION OF SOME OF THE NEWER PRINCIPLES OF TREATMENT*

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In this busy medical and surgical world of today, with the increasingly difficult problems brought about by complicated laboratory methods and new technique, we are so absorbed in the tasks of the present that we forget to go back into the past, when the foundations for our present knowledge were being laid, to see just how we arrived at the place we now occupy. Much has been said of the skill of the general practitioner or the family doctor, and of the glorified art of the practice of medicine fifty years ago, but when we go back to the period beginning with the third century B. C., we must marvel at the remarkable knowledge contained in such Greek books as "On Fractures", "On the Articulations" and "The Surgery." The Hippocratic corpus contains material forgotten by the world for centuries to be rediscovered, in some instances, only in comparatively recent times. During this period the treatment of fractures attained a surprisingly high level. For example, in describing the treatment of fractures of the femur: * * * "When the thigh bone is broken, particular pains should be taken with regard to the extension, that it may not be insufficient, for when excessive, no great harm results from

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it. For, if one should bandage a limb while the extremities of the bone are separated to a distance from one another by the force of the extension, the bandaging will not keep them separated and so the bones will come together again as soon as the persons stretching it let go their hold; for the fleshy parts, being thick and strong, and more powerful than the bandaging * * * in the case then which we are now treating of, nothing should be omitted in order that the parts may be properly distended and put in a straight line; for it is a great disgrace and an injury to exhibit a shortened thigh * * * for the arm, when shortened, might be concealed, and the mistake would not be great; but a shortened thigh bone would exhibit the man maimed. * * * When, then, proper extension has been made, you must adjust the parts with the palm of the hands, and bandage the limb in the manner formerly described. * * * The thigh bone is consolidated in fifty days." This from the book "On Fractures", 300 B. C.

Early mobilization of fractures was one of the many principles recognized by the ancients. This principle was ignored for centuries, and only recently rediscovered. A quotation from the book "On Surgery": "It should be kept in mind that exercise strengthens and inactivity wastes." Our present scientific knowledge of the physiology of atrophy of disuse is explained in this simple fundamental statement.

COMPRESSION BANDAGES

The use of compression bandages around the limb to promote healing in case of delayed union was a practice of remarkable interest. This antedated any visualization of the circulation of the blood by over fifteen hundred years and the object of the compression was to retain the "effusion" at the site of injury. The use of venous stasis to promote union has been rediscovered with each generation and even in the journals of 1931, research groups proved that the passive accumulation of blood at the site of a fracture will accelerate healing.

In the book "On Articulation" we find a rather ingenious method for treating dislocations of the shoulder, a condition which was, apparently, not a rare occurrence. A hot iron cautery was placed in the axilla and allowed to burn through the skin into the adipose and fibrous tissue next to the capsule; hence scarifying the ligamentous structures, knowing that the scar tissue would contract and shorten those tissues. The same principle was used in our present day surgery until recently when more attention has been given to shifting tendon support.

DISLOCATION OF THE HIP

Congenital dislocation of the hip was well known and the description of the physical findings found in the Hippocratic corpus could easily be transferred into a modern day text on orthopedic surgery. They describe the shortened limb, the tilted pelvis, the atrophy, the characteristic limp or waddling gait, and the change in the level of the gluteal fold on weight-bearing. Reduction was brought about by longitudinal traction and many interesting devices for reduction were described. One rather extreme method consisted of the patient being suspended by his legs from an overhead beam. A strong operator then placed his arms across the patient's perineum and swung himself free, adding his weight to the weight of the patient in the line of traction. Nineteen centuries later the manipulative reduction was devised.

In the year 300 B. C., the treatment of clubfoot deformity was practically identical to that practiced by the conservative orthopedist of today; strong bandages being used instead of plaster of paris casts.

For fourteen centuries following the Hippocratic period there was very little advancement in that branch of surgery which was to be known later as orthopedics. In the fifteenth and sixteenth centuries anatomists thoroughly explored and adequately described the skeletal and muscular systems of the human body. Traction methods with pulleys and weights for treatment of fractures were

invented and a form of inhalation narcosis had been developed.

The modern period really began with the seventeenth century and from this time on, surgical books and papers grew more and more akin to those of today. Orthopedic surgery soon became established on a firm foundation as a branch of medicine requiring practical skill and training. The origin of the word "orthopedia" dates from its use in a paper by Nicholas Andre in 1741. It is made up of two Greek roots meaning straight and child. The word is entirely misleading to the laity and has been the cause of considerable difficulty. Too often it is wrongly interpreted as the "foot specialist" and the orthopedist often creates surprise when his friends learn that he also treats broken wrists.

The pathological studies during the nineteenth century which have special bearing on orthopedics are numerous. Pasteur discovered the staphylococcus organism and proved that it was the causative agent of severe bone infections. Adams of Dublin was the first to use the term "chronic rheumatic arthritis," and Goldthwaite of Boston differentiated the types "hypertrophic" and "atrophic" in 1904. The adolescence separation of the upper femoral epiphysis, more commonly known as epiphyseal coxa vara, was first described by Muller of Germany in 1888, and the interesting pathological condition known as Perthé's disease (coxa planta) was reported some years later by Legg, Calve and Perthé. In 1895 Kummel wrote a classic on compression fractures in which he described a progressive compression of the vertebræ apparently following injury to the spine, leading to a kyphotic deformity. He believed the lesion in these cases to be a traumatic osteoporosis. Bone sarcoma, as a specific tumor, was first named by Boyer in 1845. A most intensive study of this condition has been carried out in this country by Coley, Ewing, Bloodgood, Campbell and others, and a most remarkable attack on this obscure medical problem is being sponsored by the Registry of Bone Sarcoma.

A great deal has been added to the subject of congenital deformities since the beginning of the last century. However, of real interest to orthopedic pathology is this newer concept of the cause of certain of these skeletal anomalies. The older theories of amniotic pressure or other intrauterine stresses are giving way to the increasing influence of anthopological interpretations. Sir Arthur Keith's studies in the development of the human foot show that clubfoot in the human, bears many similarities to the foot of the arboreal ape,

Figure 1—Central fracture of neck of femur. (1), Unreduced; (2), With nail in halfway; (3), Nail in head. Nail was then driven in completely and fracture impacted.

and he claims that the normal human foot is an evolved adaptation to the necessities of terrestrial life.

During the early nineteenth century, with the introduction of the plaster of paris bandage, the pendulum swung away from the idea of early immobilization. Hugh Thomas, the inventor of the splint that bears his name, believed in the therapeutic efficacy of the principle of rest, enforced, uninterrupted, and prolonged in the treatment of fractures. Stiffness and atrophy were negligible incidentals which could be corrected after the bone fragments were firmly united. However, during

Figure 2—Photograph of patient on hyperextension frame ready for plaster cast.

the latter part of the nineteenth century there was a trend to swing away from this idea and the newer methods have constantly veered from the pole of conservative immobilization to that of the radical mobilization and almost immediate weight-bearing with sufficient immobilization of the parts.

An adequate understanding of the physiology of locomotion in the human body is the one factor most responsible for rapid progress in orthopedic surgery during what we might call the modern period. Operative and clinical progress follow very closely in the footsteps of laboratory experimentation, and especially in orthopedics, where locomotion is the primary object in most cases, a proper appreciation of the normal physiology is most important.

With the improved surgical technique of the present day comes a great advancement in orthopedic as well as general surgery. The accomplishments in tendon transplantations, in bone lengthening operations for shortened lower extremities, in different forms of stabilization of joints, in arthroplasties for ankylosed joints and in skeletal traction for reduction and maintenance of complicated fractures are results worthy of the efforts which have been spent by the pioneers in this work.

The present day orthopedic literature is too voluminous to be discussed in this paper, but I would like to talk about two present day methods of treatment which I think are worthy of serious discussion: First, the modern method of caring for central fractures of the neck of the femur, and second, the ambulatory treatment of compression fractures of the spine. The methods of treatment

Figure 3—Skin tight cast for fractured spine with bony prominences padded.

I have in mind are recent enough to be considered new, and, at the same time, of sufficient age that their true value has been proven. Statistics show that only 55 per cent

of the fractures of the neck of the femur result in solid bony union when treated by the Whitman method; namely, internal rotation, abduction and extension, followed by three to four months immobilization in a spica cast. This method of treatment was considered standard until the past three or four years, during which period it has been replaced by reduction and internal fixation. Numerous types of pins, screws, nails, bolts and wires are used for the fixation, but it seems to me that the Smith-Petersen nail offers the greatest number of advantages. Originally, the nails were put in place following a long and hazardous operation, exposing the head, fracture site, and trochanter. Many of the older patients in whom we see fractures of the neck of the femur most frequently, were not able to stand the operation. Now, the majority of the men doing this type of work use what is known as blind nailing. The fractured hip is reduced under general or local anesthesia by the Leadbetter manipulation, and both extremities are put up in traction on the fracture table in moderate abduction. A six-inch incision is made distal to the trochanter and the upper femoral shaft is exposed subperiosterally. The landmarks are then determined and a Smith-Petersen nail of proper length driven in half-way. At this stage, x-ray films are made in antero-posterior, and lateral views. If the nail is going directly into the head, then it is driven home, the wound closed and patient put to bed without external fixation. (Fig. 1). If the nail is not going straight into the head, then it must be withdrawn slightly, the shaft rotated to proper position and new x-ray films made. It should not take more than 45 minutes to nail a hip if there is proper co-operation by the x-ray department. Of course, a portable x-ray machine is necessary. These patients may sit up in bed immediately and may walk on crutches (if not too feeble) at the end of two or three weeks. Full weight-bearing should not be borne until union can be demonstrated in the x-ray film.

I would like to spend a few moments on the treatment of compression fractures of the spine, limiting the discussion to fractures of

Figure 4—Fracture of the twelfth dorsal vertebra, before and after reduction under general anesthesia on hyperextension frame.

the lower dorsal and lumbar regions. The great majority of injuries to the spine are seen as compression fractures. They may be due to violent flexion from a fall, or by a crushing blow from above, such as falling slate or earth while in a stooped position. The object of treatment should be: First, correction of the deformity; second, maintenance of the reduction; third, prevention of muscular atrophy and general weakness from disuse. If the fracture heals and weight-bearing lines are reestablished normally, there is no occasion for disability. I am convinced that compression fractures of the spine, like fractures elsewhere, should be reduced early, under deep narcosis, or general anesthesia. The reduction is obtained by use of a hyperextension frame (Fig. 2) while traction is applied to both feet and the shoulders. A skin tight plaster cast, with bony prominences padded, is then applied. (Fig. 3). If no paralysis exists, the patient may be out of bed in two to three weeks and at the end of four weeks special exercises to prevent atrophy of the spinal and abdominal muscles should be started. The cast should be worn four months, and there is no need for a spinal brace. If the fracture is not sufficiently solid at the end of four months, as shown by x-ray, then another cast should be applied. X-ray films (Fig. 4) demonstrates what should be accomplished by this method of treatment and one should not be satisfied until complete reduction is obtained.

In conclusion it may be said that definite progress is being made in the specialty of orthopedic surgery. However, we cannot be too boastful of our present knowledge for we are not certain of the opinion posterity will hold for us and our contemporaries. Oliver Wendell Holmes wrote: "There is a dead medical literature and there is a live one. The dead is not all ancient and the live is not all modern."

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Proposed National Health Act

"On March 19, Senator Lodge of Massachusetts proposed by S. 3630 the enactment of a National Health Act of 1940," *The Journal of the American Medical Association* for March 30 states. "The bill is in two parts. The first part represents a revision of a bill introduced by Senator Lodge last August. It proposes to pay cash benefits from the old age insurance fund, created under the provisions of the Social Security Act, on behalf of certain unemployed individuals who receive medical, dental or hospital care, or whose wife, child under the age of 16, or wholly dependent parent receives such care. The benefits to be thus paid may not exceed $40 in any calendar year and are payable, on application of the individual, by the managing trustee of the old age insurance fund to the doctor, dentist or hospital rendering services. Among other conditions that must be met by an individual before the benefits may be payable is the requirement that he must have been registered as unemployed for at least four consecutive weeks at a public employment office or other agency approved by the Social Security Board. Senator Lodge estimates that this part of the bill will involve a possible expenditure of some $15,000,000 for the first fiscal year of its operation.

"The second part of the bill would add a new title to the Social Security Act to be captioned Grants to States for Medical Services and Facilities. The theory from which this part of Senator Lodge's bill stems is that there are certain standardized medical services and facilities which because of their high costs are not used in many cases in which their use is desirable. Senator Lodge proposes, therefore, federal grants to states that develop plans to provide such services and facilities free to needy persons and at a minimum cost to other persons, the federal grant to equal the amount expended by the state under the plan. The medical services and facilities that are thus to be made available, it is proposed, are x-ray treatments, respirators and any drug which is of substantial, accepted and specific value in the treatment or prevention of pneumonia, streptococcic infections, diabetes, anemia, congestive heart failure, glandular and nervous disorders, nutritional deficiency and typhoid fever.

"This measure is interesting for the thought it stimulates. Essentially part one is a sickness compensation plan for unemployed and dependents, subject to many abuses and almost impossible of regulation."

PROBABLE EFFECTS OF TESTOSTERONE ON PROSTATIC HYPERTROPHY*

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MAN'S desire that his genitals remain useful and not become dormant, to be outlived by his mind and body, was not born of yesterday. The quest for sexual rejuvenation dates back to ancient times and led Ponce de Leon in the search for the fountain of youth. It was for this purpose the ingestion of gonads was recommended as early as the first century. The first mention of internal secretory function of the testes is accredited to Barteau in 1775. Observations and experiments with crude extracts soon followed. Hammond and Sutton attempted the first testicular gland transplant in 1912. Because of the crude extracts one was able to obtain prior to 1927, very little advance was made in glandular knowledge before that time.

In 1927 McGee was successful in extracting androgenic substance from human male urine. This substance was called androkinin. Butenant in 1931 was successful in producing a hormone in crystalline form, and having determined its clinical structure called it androsterone. In 1935 Laqueur and his coworkers isolated a substance of exceptional potency from bulls' testes. This substance they called testosterone and its synthetic production was realized soon thereafter. The propionic ester of testosterone was found to be many times more active and for that reason propionate in sesame oil is used for therapeutic purposes.

There is a close interrelationship between the function of the testicles, the pituitary and the prostate gland. It might be well at this point to review briefly the effect produced on the pituitary gland and the prostate by removal of the testicles. It has been known for a long time that castration results in atrophy of the prostate gland and seminal vesicles.

*Read before the Mercer County Medical Society, at the March, 1940 meeting.

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The pituitary gland increases in size in the castrate. Also it has been found that in a hypophysectomized animal the prostate becomes atrophic. According to the experiments of Lower, it is believed that the testicle produces two hormones, one being androgenic and supposedly is elaborated by the interstitial cells. The second is called inhibin, a pituitary depressor, and is believed to be produced by the seminiferous tubular epithelium. The anterior pituitary gland produces a gonadotropic hormone which stimulates the testicle to produce androgen. The secretion of androgen in turn stimulates prostatic growth. As age progresses the activity of the tubular cells decrease. Less inhibin is secreted; thus the hyphophysis freed of this control secretes more actively and stimulates the interstitial cells of the testes to produce more androgen. The excessive androgen in the circulation brings about a very definite increase in the size of the prostate and also the seminal vesicles. When the testicular hormone is removed by castration the prostate ceases to get its stimulus and atrophy results. This observation prompted White to introduce castration in the treatment of hypertrophy of the prostate in the 90's. By the repeated injection of testosterone in sufficient quantities these changes can be prevented or the prostate can be restored to normal state after atrophy has occurred. It has also been observed that testosterone injected into a normal male over a long period of time results in a definite enlargement of the prostate gland. This has also been noted clinically in

therapy of young adults who have been treated with testosterone. However, when the administration of testosterone is discontinued the prostate has a tendency to return to its former size.

Before discussing the clinical results of the administration of testosterone it might be well to review briefly the most accepted theories as to the exact location of the beginning of hypertrophy in the prostate. Denning, Jenkins, and Von Wagenen believe prostatic hypertrophy may begin from either of two separate structures in about equal proportion. One point of origin is in the lateral lobes and posterior commissure and involves true prostatic tissue. The other point of origin is in the submucosal glands beneath the posterior urethra and trigone. The latter group of glands supposedly are not acted upon or affected in any way by the administration of androgens.

TIME OF OCCURRENCE

Prostatic hypertrophy is a phenomenon of senility, supposedly coming on with the decline of sexual life and usually occurring after the age of 60. According to autopsy records one-third of the male population passing this age have genuine prostatic hypertrophy. That inflammation plays some part, probably secondary to hypertrophy, is evident. It is reported by Young and his associates that 71 per cent of the 387 enlarged prostates, which they have examined, contained foci of infection. The primary cause of prostatic hypertrophy is now believed to be due to the failure of the testicles to produce the normal ratio of internal secretions. We know that every individual, whether male or female, has present both estrogenic and androgenic hormones, though sex may determine which predominates. Estrogen given subcutaneously will cause a hypertrophy of the submucosal glands of the prostate and a metaplasia of the epithelium of the prostate ducts. Testosterone given in a similar manner does not cause any histologic change in the prostate except possibly a return to normal of the mucin of the prostate gland. This being the case it might be that with advancing age the decrease in the male hormone might cause the relative increase in estrogenic hormone, thereby producing hypertrophy. The effect of the estrogenic hormone can be prevented by the administration of testosterone. On the contrary it might theoretically be possible to inhibit the growth of the prostate by the administration of estrogens, for this will depress the activity of the anterior pituitary gland and the lack of its stimulus will depress testicular function so that the enlargement of the prostate will be retarded. Treatment based on this line of thought has been practiced with some claims of success. However, there are observations which do not support this theory. The most important of these is that there is no significant enlargement of the pituitary in cases of benign hypertrophy in man. Another observation is that patients with teratoma testis in some of whom there are large amounts of circulating gonadropic substance, show no significant histologic change in the prostate. Furthermore, observers have not been able to isolate from the urine of patients with benign hypertrophy of the prostate any significant increased amount of either the gonadotropic substance or the male sex hormone. Lower reports a different experiment. He used 40 patients with prostatic obstruction, some even with complete retention. They were given desiccated beef testes by oral administration with the purpose of providing the inhibin which theoretically was deficient. Of the 40 men so treated, 65 per cent showed marked improvement both clinically and in ability to empty the bladder. However, there was no noted decrease in the size of the prostate.

HORMONAL INJECTIONS

Moore and McLellan selected ten patients with typical prostatic hypertrophy, which they divided into equal groups of five each and gave hormonal injections preoperatively. In the first group of five he gave from 285 to 1,125 mgms. of testosterone in divided doses at intervals from 12 to 95 days before

the prostate gland was removed. After histological study of the removed gland the conclusion was that there was no observable alteration in the histological appearance of the tissue. In the second five they gave from 15,000 to 140,000 international units of theelin in from 10 to 31 days prior to operation. After operation the gland was studied and the conclusion was that there was a conspicuous alteration in urethral and ductal epithelium and but little, if any, changes in the tissues undergoing benign hypertrophy.

INFLUENCE OF TESTOSTERONE

Bolend selected 23 cases of typical prostatism with urinary retention in order to study the influence of testosterone on the prostate. From each patient one piece of prostatic tissue was taken from the lateral lobe at a point near the vesical neck with a punch or resectoscope. The patient was then given 10 mgms. of testosterone three times weekly until 150 to 200 mgms. were given, at which time another biopsy was made. A review of the findings in this series of prostatic biopsies, taken before and after testosterone therapy, indicates three changes in the gland following treatment: (a) an exaggeration of glandular hyperplasia, (b) a reduction or at least no increase in the stroma, and (c) reduction in the inflammatory reaction. Seventy-four per cent of these treated cases showed marked improvement to complete relief of clinical symptoms. One case of carcinoma of the prostate was reported as improved. It is interesting to note that of the nine cases complicated by chronic infection, six of these showed no improvement. One must not overlook the fact that in evaluating these results resection of the areas for biopsy probably had a marked influence on the reported improvement.

McComb, Pearce, Laroche, Clarke, and others have reported a series of prostatics who were treated by endocrine therapy alone with improvement clinically in from 50 per cent to 66 per cent of cases. However, there was no demonstrable reduction in the size of the prostate. The nature of the cause of this improvement after testosterone therapy is little understood. Champy, Coujard, and others believe that just as estrogen has a tendency to produce squamous metaplasia, so androgen has a tendency to produce a mucoid edema which they regard as characteristic of a healthy prostate and a preventative of spasm of the urethral sphincter. They believe that it is spasm of the sphincter that causes the symptoms rather than enlargement.

Robert Day asserts that in addition to clinical improvement there is reason to believe that this therapy slows down and tends to arrest the tendency to hypertrophy. "We have treated a number of patients with prostatism over a period of nearly two years with no demonstrable increase in the hypertrophy and with great relief of the most distressing subjective symptoms."

ACTIVITY OF THE GONADS

Muschat, Labess, and Meranze state that the treatment of the enlarged prostate gland based on the theory of insufficiency of male sex hormone is not supported by actual quantitative studies of the male sex hormone in the body of prostatic patients. They find that there is a normal amount of hormone in men with prostatic hypertrophy. They attack this problem from another angle; that is, by the determination of the activity of the gonads in the prostatic not only from the amount of hormone excreted in the urine but to the total amount actually present in the body. This was accomplished by the creatinine utilization method, which apparently was parallel with gonadal activity. Castrated animals lose their ability to utilize creatinine from the food and this is excreted to a large extent in the urine unchanged. This phenomenon is specific to the male sex but does occur in castrated females. However, the creatinine disappears readily from the urine after the injection of the male hormone. The adult male excretes creatinine only in wasting diseases, cachexia, fevers, hyperthyroidism, diabetes mellitus, acidosis, and in liver disorders. In childhood creatinine administered parenterally occurs quantitatively unchanged in the

urine and with the onset of puberty swiftly disappears in the body without increasing the output of creatinine in the urine. Eunuchs likewise have the inability to utilize creatinine. Men with loss of sexual function also show marked increase in creatinine excretion, which is evidently due to lack of male sex hormone. The conclusion from this test is that there is a noted decline in the activity of the gonads after the age of 50, which is the usual age of sex decline. However, men with prostatic hypertrophy have the same creatinine retention as a normal male adult, indicating continued gonadal activity. The hypothesis is that prostatic enlargement is caused by the continued presence of an abnormal amount of male sex hormone in the circulation resulting from continued gonadal activity after the period of normal sex decline.

David Thompson summarizes the present status of prostatic endocrine therapy as follows: "We have three proposals for the endocrine treatment of prostatic hypertrophy; the estrogenic, the androgenic and contruin methods, each of which has its supporters both in theory and practice. I do not think it has yet been proven that any of these is valuable or that any one is useless."

SOME IMPROVE SPONTANEOUSLY

Ruscoe Clark has done well to point out that a fair proportion of prostatic patients may improve spontaneously over a period of years and that hypertrophy is not always progressive. We certainly require a more unbiased, well-controlled clinical study before adopting or discarding any one of these suggestions, and investigations may very well show that the prostatic patients can be subdivided into different categories for each of which there is an appropriate medical and surgical treatment.

My experience in the use of testosterone propionate is limited to slightly over two years and is altogether clinical. I think it has a great use in the treatment of certain cases of impotence in those whose age range is within the limit of sexual activity. However, for this it should not be used to the exclusion of other treatment until a careful urological history and examination has been made. Often other factors enter into the production of this particular complaint. Occasionally it is of great value in assisting those men who have lost an interest in their work and who seem to be developing an inferiority complex. Outstanding examples are depressed energy states, nervous exhaustion, asthenias, and sometimes severe menopausal symptoms of the male. They may not complain of sexual debility, but a decrease in the androgenic hormone of the body may play a big part in the general metabolic changes which go to make up a complicated picture. In hypogonadic cases it produces wonderful results. Its use produces growth of the penis, scrotum, testicles, pubic and axillary hair. Parents of boys of this type are certainly grateful for its use. However, the intensive administration of male sex hormone should not be continued over too long a period of time. Long use and excessive doses in these cases may cause enlargement of the prostate which tends to disappear on discontinuance of its use. A careful history, physical and urological examination should be done in the prostatic before the use of testosterone is instituted. It is necessary to distinguish between prostatic obstruction due to benign hypertrophy in contradistinction to that produced by carcinoma, median bar, bladder neck contracture, prostatitis, or prostatism sans prostate. Obviously in these cases little, if any, benefit can be expected from sex hormone therapy. If used in these cases it will fall into disrepute. In benign hypertrophy, however, good results are obtained in about 65 per cent of cases reported and the observations of both theory and practice seem to warrant its employment. Large, soft prostates seem to respond better to its influence than those which are more firm. Needless to say, our knowledge of this hormone is in its embryonic state and its value will depend largely upon the careful examination, observation, the follow-up of our therapy, and in the unbiased attitudes which we take in our deduction.

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SOME DISEASES OF THE MOUTH*

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TRADITION is the oral transmission of ideas or beliefs without written memorials. Medicine and dentistry will have traditions retarding their progress until research investigators incorporate them in scientific literature as "truths" or prove them false. These ideas are undoubtedly the results of clinical observations which it became necessary to explain without the scientific data, such as is available today.

We have been led to believe that the oral cavity may be considered normal in healthy individuals and still possess a rather constant group of bacteria. This has been spoken of as the normal bacterial flora of the mouth. We do know, however, that the tissues of the oral cavity are oftentimes the first to undergo demonstrable secondary changes due to systemic or metabolic diseases. How does it happen that even with these secondary changes and bacteria present at the same time, acute infections so rarely occur?

In order to be able to answer this and similar questions we undertook to investigate this field. There is some protective mechanism in the tissues of the oral cavity which prevents invasion by pathogenic organisms.

A normal mouth is rarely found. Our first problem was to determine what groups of bacteria constitute a normal flora. From this information we expected to learn about the abnormal conditions, but much to our surprise every oral examination revealed infected pockets along the margin of the gums, over an erupting tooth, infected tonsils, an inflamed throat, etc., each of which seemed to be associated with a different group of organisms. Some two hundred examinations were so unsatisfactory that we were forced to conclude: "A normal bacterial flora is extremely rare."

Two investigators in our laboratory, while working on another problem, discovered a sort of self-protecting mechanism related to the superficial cells of the skin which apparently destroyed bacteria. Its specific characteristics have not yet been learned but when strains of bacteria are placed upon the normal skin, there is something in the surface epithelium which destroys 90 per cent of the organisms in 20 minutes and the balance will disappear in 15 minutes more. There are, however, four areas over the body where this process does not take place. They are: around the fingernail beds, the toenail beds, the zone of contact of the lips (not the vermillion margin), and the gum margins. Elsewhere in the mouth a similar protection is afforded.

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but other factors mask the self-sterilizing effects.

The strains of bacteria in the mouth may change every few hours which is as we should expect when we think of the organisms which are carried into the oral cavity every time air is inhaled or liquid and food is taken. The mere licking of the lips and swallowing carries bacteria which were deposited upon the lips back into the throat by the time the act of swallowing is completed. This too is what should be expected when the process of swallowing is analyzed and it is a very important factor to consider while studying infectious diseases of the mouth and throat.

During the movements of deglutition the lips are closed rather firmly, the tongue is placed in the roof of the mouth so that the only portion of the dorsum of the tongue which touches the palate is the margin and the midline and then as the muscles of the throat come into play producing a sort of vacuum effect the midportion of each lateral half of the tongue becomes a sort of gutter through which bacteria and other foreign substances are sucked backward into the throat. Any infection from the lips will, therefore, affect these gutters producing inflammatory or desquamating results such as is seen in the first degrees of Moeller's glossitis, etc.

ATTACHED AND TRANSIENT FLORA

Further study of the mouth reveals two definite flora. One may be considered the attached or endogenous flora and the other the transient or exogenous flora. A very good example of the former is the coated tongue. Removal of a few of the hair-like processes from such a coating will reveal, under the microscope: mucin shreds, epithelial cells with bacteria attached, groups of bacteria, and leukocytes. Other substances may also be present such as bile salts, etc., according to the systemic condition with which it is associated. It, therefore, seems practical to consider the mucin as a combining substance which tends to glue down transient organisms as a portion of the oral protective mechanism. It is almost impossible to free the superficial cells of the bacteria once they have become attached. Investigators have used all sorts of substances, dehydrating packs, and even scrubbing the dorsum of the tongue with unsatisfactory results. The other surfaces of the mouth, with the exception of the gum margins, possesses varying degrees of self-sterilization as was found to occur on the normal skin surfaces of the body.

MECHANICAL REMOVAL OF BACTERIA

From a practical standpoint, the mechanical removal of bacteria from the oral cavity, such as expectoration and swallowing, is the first therapeutic measure to consider. Normal salt solution is undoubtedly the most satisfactory agent for this. As a matter of fact this solution has the additional merit of increasing normal physiologic activity and, thereby, stimulating the intricate self-sterilizing properties. If, however, a Vincent's infection exists or ulcerative stomatitis is present an oxidizing agent should be applied or the mouth should be irrigated with a solution of 1/5000 potassium permanganate or a five per cent solution of potassium chlorate. A very satisfactory method of irrigating the oral cavity is to tip the patient's head over a basin and then by using a medium sized rubber ear syringe the solution may be directed in between the teeth and then over the other surfaces of the teeth and mouth. In hospital work we have been very enthusiastic over the use of a rather large container such as an irrigating can and with a glass pipet attached to the end of the rubber tube, the oral cavity may be irrigated with quantities of solution in a thorough and non-traumatic manner. To facilitate this procedure the patient may be turned upon the side and the head supported over a basin.

The most satisfactory sterilizing preparation we have been able to find for use in the mouth is a two per cent solution of iodine as an irrigating solution and the straight tincture for local field application. This latter agent takes three minutes to reach its maximum affect and remains at this level for about

eight minutes. Merthiolate preparations are next to iodine in efficiency and we believe the metaphen solutions are next to be considered.

Any case of Vincent's angina which persists, under adequate treatment and without improvement, for a period of two weeks should be considered on the basis of an oral manifestation of a systemic disease until proven otherwise. In our clinic all patients suffering with this infection must submit to a complete blood count on the day of their first visit. This examination, particularly the differential count, is repeated whenever it is thought advisable. This may seem to be an unnecessary procedure but we must remember that Vincent's organisms are saprophytes and so frequently the first symptom of the blood diseases is persistent or recurring "trench mouth." So often this infection is treated as a local condition and the malignant constitutional disease is permitted to go untreated for an indefinite time. As in other conditions this infection should be diagnosed in a positive manner if our patients are to receive our best services.

BLEEDING GUMS

The first symptoms of many constitutional diseases may be found in the mouth. The best example of this is the condition known to the dentists as "bleeding gums." So frequently, to them, this falls into the group of pyorrheas. I use the term "pyorrheas" advisedly because I am confident that even at the present time and based upon data available we (dentists and physicians) should consider pyorrhea as merely a broad term indicating any disease of the gum margins. Frankly, I believe, this term has served its purpose through the years and now should be discontinued in favor of terms which indicate more specific diagnoses.

Bleeding gums may be of local or systemic origin. Any irritation to the margins of the gums may result in a local congestion and slight bleeding. Some of these local factors are deposits of hard salts (tartar), "pockets" under the tissue margins with chronic infection, flaps of tissue over erupting or impacted teeth, and gum margins which are unprotected from the trauma of mastication of foods, overhanging edges of metallic fillings, crowns, poor-fitting dentures, or removable bridge work, etc.

Toxic constitutional diseases, such as metallic poisonings and bacterial toxemias, most of the blood disorders and diabetes are associated with bleeding gums. In fact, any case which does not stop bleeding from the gums in a relatively short time (ten to fourteen days) after local irritations have been removed should be thoroughly examined for systemic disturbances.

GLANDS AS ORGANS OF ELIMINATION

It must be remembered that the mucous and salivary glands which empty into the oral cavity serve as organs of elimination for toxins, metallic salts and other substances which have not yet been identified by chemical examinations. All of these are associated with a local congestion of the gum margins upon which, because of pathogenic bacteria always present, small ulcers develop and bleeding starts, to continue as long as the systemic condition remains at the same stage of severity.

The pigment lines which are manifested on the gums when the blood becomes saturated with a metallic salt demonstrates how the glands of the oral mucosa serve as organs of elimination. The lead line, bismuth and mercurial stomatitis are all due to the attempt on the part of the system to rid itself of excessive quantities of these salts. It has been thought that as these metallic compounds pass through the mucosa and come in contact with particles of food a metallic sulphide of the metal is formed which results in the characteristic color. Suffice it to say that such is not the case because these pigments remain for years and are an intercellular substance instead of surface products. Their deposition is the result of cell metabolism on an acid-base principle which is too complex for consideration in this paper. Rarely, however, do the poisonings become complicated with bleeding of the gums.

Blood diseases, as stated above, have as

one of their first symptoms a bleeding of the gum tissues. It is not possible to make a positive diagnosis of the type of blood condition to be dealt with merely from the appearance of the gum margins, especially when the disturbance is in the early stages, but as the disease progresses more findings may be observed which are more definitely related.

THE LEUKEMIAS

The leukemias present similar findings in the oral cavity. It is not possible to identify each of the types of this group of conditions from the oral findings only. There will be a chronic inflammation of the gum tissues with, perhaps, a definite hypertrophy of these areas and a bluish tint indicating a passive congestion. In the hypertrophy of this character, pockets will appear around the teeth but upon close examination it is to be noted the gums extend over the crowns of the teeth to a greater or lesser extent instead of along the roots of the teeth and with exposure of the roots. The teeth may appear to be loose but not to the extent as is found in alveolar absorption (osteomalacia of the alveolar process). During the early stages of hypertrophy there will be a chronic bleeding of the gums and the condition is most frequently diagnosed as pyorrhea. Even though the oral cavity is placed in a strictly hygienic condition the gum margins will remain swollen, and bleeding will continue. As the resistance of the patient is lowered with the advancement of the general disease there is a tendency toward a Vincent's infection which will respond to treatment but usually the infection soon recurs in a more severe form and is more resistant to the repeated therapy. Not infrequently the patients will present themselves merely for treatment of the infected gum condition and they really think they are suffering with pyorrhea only. They do state, however, the number of times the disease has returned and being disgusted they demand the removal of all of the teeth. Two years ago a patient appeared in the clinic with such a history and demanded the extraction of all of his teeth even though the tissues were sloughing with a Vincent's infection. This patient fairly stormed out of the hospital complaining about the poor service he was given. He did find his way to an office where the teeth were removed in two sittings and we learned he died four days later. Each time teeth are removed in the presence of this disease there is a marked aggravation of the constitutional disease which not infrequently results in loss of the patient's life.

Hodgkin's disease presents a similar group of findings in the oral cavity but in a more chronic form. The hypertrophied gum margins will feel more firm in consistency than occurs in leukemia and secondary infections of Vincent's angina do not occur so often. Obviously "trench mouth" does appear associated with this constitutional condition but usually in a mild form. The bleeding of the gums is not as severe as found in the leukemias either, although frequently this symptom remains in a more chronic form, due to a large extent, to trauma of mastication.

POLYCYTHEMIA

Polycythemia is considered a rare disease but the mild types are by no means as unusual as we have been led to believe. An interesting observation is that the oral mucosa will present findings of this condition during its early stages. The mucous membrane of the mouth will appear extremely smooth and slightly thickened. Bleeding from the gums is an occasional finding and over the surface of all of the membranes there is a layer of light brown spots which are pinpoint in size and appear to be immediately under the surface epithelium. The gum margins will be smooth, rarely swollen and of a brownish pink color. Following the extraction of teeth there is a tendency to prolonged bleeding and in the advanced cases the clotted blood will feel of an oily character on the gloved fingers instead of the characteristic sticky or roughly granular sensation. These oral manifestations will appear even though the blood count is not raised more than 500,000 or 1,000,000 in red cells. It is not at all unusual for patients to present themselves with abnormal

oral symptoms with a laboratory report containing the remarks: "Nothing of pathological character." This is one of the examples which should dissuade doctors from accepting mere laboratory reports as final and positive diagnoses. If, however, the patient has been examined, clinically, by the director of the laboratory making the report, more attention may be paid to his findings, but it is so often highly impractical to make a positive diagnosis of diseases on blood counts only.

"HOME MEDICATION"

A patient was admitted to the hospital late at night suffering from a hemorrhage from sockets of the recently extracted upper six anterior teeth. While packing the sockets to control the hemorrhage, the blood on the gloved fingers offered an oily feeling and a blood count was taken at once. The red blood cells numbered 6,800,000 which was obviously high for a woman patient 46 years of age. Two weeks later the red blood count was 8,200,000 and at the end of a month the examination revealed 10,000,000 red blood cells per cu.mm. The patient stated she had thought she was anemic and was advised by a druggist to take calcium gluconate which she had continued for more than six months. It is not possible to assume that this condition was due to the medication she had been taking, but it does show to what extent people will go when practicing "home medication." Many imagined diseases are treated by using dangerous drugs merely on the advice of a neighbor.

A most satisfactory method of controlling a hemorrhage following the extraction of a tooth is by packing the socket with gauze saturated with thromboplastin and tannic acid.

Agranulocytic angina is a most interesting disease to study but very difficult to describe. The symptoms vary so much that a satisfactory definition has not yet been offered. Many theories have been developed as to its etiology but none are satisfactory. The disease seems to be occurring with increasing frequency. Here too we find the oral symptoms among the first to be demonstrated. These patients will usually complain of a vague soreness in a very localized area of the mouth. It is most often limited to a zone on the alveolar ridge or around the bicuspids or cuspid teeth. Not infrequently a small crescent of brown necrotic tissue is to be seen along the gum margin and on the buccal surface of these teeth and may be seen as its first symptom. The zone immediately below this gangrenous area will appear inflamed and will be slightly tender and sore. Usually there is the appearance of a passive congestion over the sides of the tongue and the lymphoid structures will appear to be swollen. The patient will complain of a glossodynia and then the constitutional symptoms will become manifest; weakness, tiredness, inability to throw off infections and colds. Some of the patients suffer recurrent attacks of conjunctivitis and also repeated sore throats. The disease seems to progress by waves of improvement and depression. The oral symptoms become more pronounced and the throat will become rather painful. Later the mucous membranes of the mouth and throat will become so highly inflamed that the redness will appear of a flaming character. Vincent's angina may develop on the margins of the gums or in the throat and will be very difficult to control. The general picture will gradually progress until death.

It is very probable that the endarteries in the margins of the gums pass through very definite changes during the course of these diseases which accounts for the characteristic symptoms. This problem is being studied in our laboratories at the present time.

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The descriptions of the several oral conditions are not yet in publication but are abstracts taken from reports of observations made from the examination of patients which have been treated in our clinic.

THE SURGICAL PROBLEM OF GALL-BLADDER DISEASE*

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THE problem of gall-bladder disease is one of such constant and general interest that repeated reviews of its literature and unbiased reports of conscientious surgeons are still warranted. Gall-bladder diseases has been known for fifteen centuries, Alexander of Tralles probably first mentioning human gallstones in his writings in the fifth century. Later accounts of gallstones are credited to Gentil de Foligno, professor at Bologno and Padua, and to Silvaticus, in the fourteenth century. John Fabricus (1618) is credited with the first recorded attempt at surgical drainage of the gall-bladder. Jean Louis Petit incised and drained gall-bladders adherent to the abdominal wall, and Sebastian, Graves and Thudichum each advocated a two-stage operation for gallstones, first sealing the gall-bladder to the abdominal wall and second, incising into the distended gall-bladder.[1 2]

Bobbs of Indianapolis (1867) performed the first cholecystostomy in this country. The first cholecystectomy is credited to Langenbuch in 1882, and Justus Ohage of St. Paul, Minnesota, was probably the first to perform cholecystectomy in this country (1887), his being the ninth case in the literature.[1]

Halstead made very definite contributions to gall-bladder surgery. He introduced the use of rubber gloves and the fine silk suturing of the common duct over the Halstead hammer. He was also the first to excise the ampulla of Vater and the papilla of the common duct for cancer.[1 2]

According to Gordon Taylor many distinguished persons have suffered from gall-bladder disease including Horace, Alexander the Great, Sir Walter Scott and John Hunter.

*Read before the Mercer County Medical Society, Bluefield, West Virginia, January 25, 1940.

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Sir Frederick Treves died unoperated upon of a perforated gall-bladder and peritonitis and at least two former presidents of the Royal College of Surgeons had gallstones or disease of the bile passages.[3]

Halstead stated that in 1880 he performed his first gallstone operation and at that time only one or two operations for gallstones had been performed in this country.[12] We have come a long way in the understanding and treatment of gall-bladder disease since that time, but as Totten[11] says of the treatment of acute cholecystitis, there is still no unanimity of opinion among authors on the subject.

The progress of our profession in the understanding of biliary disease has developed in the same manner as does the understanding of the diagnostician; namely, by adding to the knowledge of our teachers the observations of our own experience. In early practice as I approached a patient with symptoms of gall-bladder disease I subconsciously recalled the historic medical school slogans of, "fair, fat and forty"; "belching, pain in the shoulder blade and colic"; "jaundice, clay-colored stools and bile-colored urine", with possibly stones in the feces, fever, leucocytosis, etc. Then as I saw patients with symptoms of angina pectoris, myocarditis, hypertension, arthritis, asthma, and other systemic conditions improve or get well with the removal of a diseased gall-bladder, my diagnostic formula was enlarged.

With the application of röentgen rays to diagnosis, the gall-bladder was x-rayed and some gallstones and some gall-bladders filled with very thick bile and pus were found to cast shadows. Thirty per cent of stones do not.[1] Graham and Cole then developed the technique of cholecystography and we now have a relatively accurate, but not infallible, means of diagnosis of biliary conditions by means of the shadow cast by tetraiodophenolphthalein as it is collected in the gall-bladder. One of my cases illustrated this lack of infallibility.

A nurse, twenty-four years of age, with an essentially normal past history, began to have pain in the right upper quadrant and right shoulder. The pain was quite acute at times, radiated from front to back and was accompanied by slight leucocytosis. A Graham-Cole x-ray was made by a very competent radiologist and he reported absence of a gall-bladder shadow despite the fact that a double amount of dye was used and none was vomited. He made a röentgenological diagnosis indicating a pathological gall-bladder. The patient's discomfort was definite but she had no jaundice or biluria. A Vanden Bergh test was not made. At operation through a modified Balfour incision a subacute high retroperitoneal appendix was found and a congenital absence of the gall-bladder. The only suggestion of a gall-bladder was a small nubbin of tissue on the common duct between the two lobes of the liver about the size of the head of a lead pencil. The patient was relieved of her pain by the removal of the appendix.

DOUBLE GALL-BLADDER

Pettinari reports the lack of visualization of a double gall-bladder, one full of white bile and one full of stones, despite both oral and intravenous cholecystography.[3] The x-ray is therefore not infallible and must be used only as an aid to careful study and good clinical judgment. Walters and Snell[1] record numerous variations of anomalies, including intrahepatic, double, bilobar, hourglass, and congenitally absent gall-bladders.

Some further help in diagnosis of gall-bladder conditions has come from the suggestion of Meltzer in 1917 that the introduction of magnesium sulphate into the duodenum would cause dilatation of the sphincter of the common duct. From this Lyon developed his plan for the diagnosis and treatment of inflammation of the gall-bladder and bile ducts by passing a tube into the duodenum, then injecting 50 per cent magnesium sulphate into the duodenum by way of the tube, and studying the bile drainage.[14] I used this method as a diagnostic and therapeutic aid for some time, but for the past year I have used the substitution of olive oil 40 c.c. for the magnesium sulphate as it seems to give more profuse drainage of bile and causes much less discomfort and less purgation of the patient. The oil does make microscopic examination of the bile crystals slightly more difficult but on the other hand there is never any crystalline magnesium sulphate to contend with.

THERAPEUTIC APPROACH

When with a good clinical study, and the aid of laboratory methods the diagnosis of gall-bladder disease is made, what should be the therapeutic approach? Despite the enthusiastic suggestions of some writers that gallstones may be passed, dissolved or absorbed, by means of injections of ether and oil beneath the skin, ether inhalation, or the taking of this or that vitamin or medicine, my experience has been that stones in the gall-bladder or any of the biliary ducts need removal, and that one is justified in recommending immediate surgical treatment unless the patient's condition otherwise contraindicates. I say this because of the potential danger to the gall-bladder, the ducts, the liver, the pancreas and duodenum, and in fact to the entire well-being of the patient. I have operated upon two patients whose records illustrate this point.

E. L., a thin 54-year-old man had suffered from gall-bladder disease for fifteen years. When he consulted me he was having colics once or twice a month severe enough to re-

quire morphine. He had a gall-bladder full of stones, a blood sugar of 170 with glycosuria and a complete absence of free hydrochloric acid in the stomach, but no changes in his blood smear. He had been jaundiced, but was not at the time of operation, and coagulation time was high normal. He had been treated conservatively because of fear of operation both on his part and on the part of the doctors whom he had consulted. A German internist had told him that he would die if he was ever operated upon.

PREOPERATIVE TREATMENT

Preoperatively he received a transfusion of 240 c.c. of whole blood, intravenous 33 per cent glucose solution 80 c.c. and 10 per cent calcium chloride 10 c.c. with 20 units of insulin subcutaneously. Under light ether anesthesia the stones were removed, the gall-bladder drained and the duodenum was freed of its adhesions. There was some swelling about the ampulla of Vater, also of the head of the pancreas, and extending into the pancreas, but there were no stones in the common or cystic ducts. The bile drainage was black and crystalline for two weeks and then cleared. The drainage tube was removed on the twentieth day. The blood sugar gradually became normal but secretion of free hydrochloric acid never returned to the stomach. Six months later colics without jaundice returned but the man had gained twenty pounds, and removal of the gall-bladder was carried out with ease and safety. The swelling of the ampulla and pancreas had subsided and the patient remained entirely free of biliary symptoms for the two and one-half years that he was followed after cholecystectomy.

Frau H., a fat German woman of 58 was referred to me with the complaint of gall-bladder pain and colic, but no jaundice. She gave a history of very severe gall-bladder disease eleven years before, which had been treated conservatively without surgery. At operation I found an old fistulous connection between the gall-bladder and the duodenum which had become obstructed by a stone. There was no other stone in the gall-bladder or ducts, but the cystic duct was nearly occluded by fibrosis. The gall-bladder had filled up and the cystic duct could not take care of the drainage after the fistulous opening was plugged. I removed the gall-bladder and closed the fistulous opening in the duodenum and the grateful old lady came to bid me goodbye when I left Peru two years later. She had been well following operation. Kind Providence allowed that neglected gall-bladder to rupture into the duodenum during her first illness but surgical drainage and removal of stones is a safer method.

Stones in the gall-bladder are a constant threat to comfort and even life itself. Halstead in 1901 stated, "Opie has found that gallstones have been present in the majority of the more recently reported cases of acute hemorrhagic pancreatitis." [12]

William J. Mayo wrote, "It is an axiom of medicine that cancer does not begin of itself but in a preexisting lesion and this is true of malignant disease of the gall-bladder and bile ducts. In our experience when malignant disease of the gall-bladder has been discovered, gallstones usually have been present." [1]

In chronic or recurrent gall-bladder disease with or without demonstrable stones I favor operation provided careful study tends to rule out other cause for the symptoms. I do this first, because stones often can not be demonstrated by x-ray or other preoperative means, and second, because operation offers the best hope of a prompt cure, despite the fact that cholecystectomy in non-calculous gall-bladders has not shown the high percentage of complete cures that it has in the calculous gall-bladder cases. I feel that the gall-bladder should be completely removed in these cases.

CASE REPORT

A 22-year-old girl came to me six months after a cholecystectomy which had been done elsewhere, complaining of colic-like pain similar to her pain before operation. She was not jaundiced, she had no appreciable bile in her urine, (just a trace), but she was

definitely having colic-like pain from the biliary tract. At operation I found that the first operator had cut the gall-bladder off nearly two centimeters above the cystic duct thus leaving a small pouch which was still storing bile. The cystic duct was tortuous and sclerosed and the small gall-bladder cyst was tense and causing pain. There were no stones in any of the ducts as proven by careful exploration. Removal of the remaining portion of the gall-bladder down close to the common duct cured the patient.

CONSERVATIVE TREATMENT

The treatment of the acute gall-bladder has received considerable attention in the literature in the past two years. Many writers still cling to the time-honored and generally accepted policy of conservative treatment, while others have swung the pendulum so far to the other extreme that they recommend cholecystectomy in empyemas and severe febrile cases. Some recommend cholecystostomy with cauterization of the lining of the gall-bladder by electric or actual cautery or with phenol followed by alcohol. Still others have recommended subserous cholecystectomy with drainage of the cystic duct.

I prefer a middle course. My practice has been to delay only long enough for a careful estimation of the patient's condition as to surgical risk, accurate diagnosis, and preoperative preparation of glucose intravenously, calcium chloride intravenously, and vitamin K and transfusion when indicated. The patient is then given pentobarbital sodium gr. three by rectum and morphine gr. one-sixth or gr. one-fourth hypodermically and taken to the operating room when drowsy. Under local anesthesia the tip of the distended gall-bladder is exposed and gauze packed around it. A sharp suction trocar is then plunged into the gall-bladder, the organ being supported by Lahey forceps or gauze to keep it from slipping away. As the bile and pus is sucked out, the gall-bladder collapses and can be grasped firmly at the fundus by Lahey or Allis forceps. The fundus is then opened widely and all free stones removed with care not to penetrate the mucosa. A one-half or five-eighths inch fenestrated soft rubber tube is fixed into the gall-bladder by double purse string sutures and the non-fenestrated portion led out at the most direct point of the incision. A rubber glove drain is introduced alongside the gall-bladder into the right costohepatic region and the wound closed around the two drains. I have operated upon, or assisted in the operation by this method upon, a number of patients with acute gall-bladder disease including two in the midst of typhoid fever, one with a severe bronchitis and one with basilar bronchopneumonia. These diagnoses were carefully made and in each case the biliary drainage was black and infected. The entire general condition of the patients improved rapidly following the operation, perhaps as the result of it.

In none of the patients did I have to reoperate to perform cholecystectomy and in one the Graham-Cole x-ray was reported normal at two and five years after operation. It may be that in time some of my drainage patients will require removal of their gall-bladders as is suggested by the statistics of some authors, but I feel that cholecystectomy is dangerous in the acute empyemas and febrile cases. One can do a great deal by second-stage operations for a living patient, but nothing for one who has died from a too radical primary procedure.

LIVER INFECTION

In the postoperative treatment of patients with disease of the gall-bladder, we must remember that the liver is very frequently affected to some extent. Judd and Metzner found that at least one patient in five subjected to cholecystectomy had inflammatory changes in the liver, pancreas or both.[1] Ravdin has shown that glucose is a great and necessary help to the liver in combating disease. It may be necessary to use as much as 2,000 to 4,000 c.c. of five per cent glucose daily by slow intravenous infusion.[1] Calcium chloride intravenously aids not only the liver but undoubtedly is a cardiac tonic as well and

helps prevent postoperative accidents and bleeding. A German trained doctor in Peru told me that the German surgeons still use intravenous sodium thiosulphate 0.5 to one gm. in the cases of so-called postoperative liver shock or insufficiency. I have used it in only one mild case and can draw no personal conclusions. It is said to stimulate liver activity and bile flow, and Walters and Snell[1] mention its use in patients with pruritis. Transfusions of whole blood not only supply fluid but combat the protein loss and the anoxemia sometimes seen postoperatively thus helping to prevent the tendency to liver and kidney insufficiency.

Walters and his co-workers have found that morphine, codeine and dilaudid produce spasm of the sphincter at the lower end of the common duct.[10] Amyl nitrite, glyceryl trinitrate, and theophylline with ethylenediamine were found to relax the sphincter spasm. These authors suggest the use of morphine and glyceryl trinitrate as a therapeutic test for spasm of the sphincter of the common duct, and recommend glyceryl trinitrate one one-hundredth beneath the tongue or the inhalation of an ampoule of amyl nitrite in the treatment of this condition. Lyon's duodenal tube with injection of olive oil into the duodenum often helps relax the spasm. High fat diet and frequent meals are indicated in the treatment.

DEHYDROCHLORIC ACID

Best and Hicken,[6 7 8] Mock,[5] and others have advised the use of dehydrochloric acid in aiding the passage of stones. Best uses dehydrochloric acid gr. three and three-fourths four time a day plus nitroglycerine t.i.d. the first and third day plus atropine gr. 1/150 three times the second day in a three-day regimé as a means of aiding the passage of stones in the common duct. They also use one or two drams of magnesium sulphate by mouth in the morning and cream or olive oil at night for three days. Walters and Wesson recommend the instillation of ether into the common duct through the drainage tube plus the inhalation of amyl nitrite in cases of a stone in the common duct overlooked at operation.[1] The ether is said to cause fragmentation of the stone and increase the intraductal bile pressure. Ravdin[13] is using an ether and oil mixture injected into the common duct through the drainage tube. These methods may well be tried but if unsuccessful an early surgical removal of the stone is indicated.

The use of suprarenal cortical hormone either by mouth or injection is said to assist in the retention of chlorides postoperatively.

Time does not permit the discussion of cancer of the gall-bladder, of diseases of the biliary passages *per se*, nor the various techniques of operative procedure. I have but tried to draw some conclusions from my own experience in the light of what I have read of the experiences of others. From this review, I believe the following tentative deductions can be made:

1. Gall-bladder disease may be found in young or old, fat or lean and may be associated with diseases in other organs.

2. We have valuable laboratory aids to the diagnosis of gall-bladder disease; namely, the x-ray, duodenal drainage and Vanden Bergh test, but these are not infallible and the most important link in the chain of diagnosis is good clinical judgment.

3. Gall-bladder disease is a surgical problem.

4. The gall-bladder containing stones should be considered a surgical emergency because of its potential danger to other organs.

5. Acute cholecystitis, because of its potential danger to other organs should be treated as acute localized infections elsewhere, and drained.

6. With our present aids in preoperative and postoperative care gall-bladder surgery has become much safer and more curative.

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Aminopyrine Requires Labeling

All products containing the drug aminopyrine should have that name plainly written on the label rather than its complex chemical name, Oscar Berghausen, M.D., Cincinnati, advocates in *The Journal of the American Medical Association* for April 20 in reporting a death from the use for arthritis of a preparation called causalin. Dr. Berghausen says that many physicians are not familiar with the complex chemical nomenclature for amniopyrine, a drug which may cause a deficiency of white blood corpuscles. In the case reported by him such deficiency resulted in the death of the patient who had taken three capsules of causalin a day over a period of a month. Other deaths from causalin have been reported and the drug has been the subject of condemnatory reports by the Council on Pharmacy and Chemistry of the Association.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Hippocrates noted that there is an association between pulmonary and intestinal tuberculosis. But even to the present day the exact relationship of pulmonary to intestinal tuberculosis has remained obscure. Light is shed on the subject by correlating the clinical with the pathological findings, as was done at Sea View Hospital where more than one thousand cases of tuberculosis were autopsied. A summary of the article describing the study, together with brief comment, follows:

Intestinal Tuberculosis

1. A study of 1,043 autopsied cases of tuberculosis is presented with an incidence of 734 cases, or 70.4 per cent, intestinal tuberculosis.

The study included all cases of tuberculosis, both pulmonary and extrapulmonary, which were autopsied during a five-year period, 1934 to 1938.

2. Intestinal tuberculosis is less extensive and less frequent above the age of forty.

The greatest number of cases occurred between the ages of 20 and 39 years—76 per cent in this age group showed intestinal involvement. When cases of intestinal tuberculosis are divided according to the extent of intestinal involvement, it is found that in the older age groups, intestinal tuberculosis when present, tends to be less extensive. The lower incidence and extent of intestinal tuberculosis in the older age group has never been satisfactorily explained.

3. Intestinal tuberculosis is more extensive and frequent in females and in Negroes than in males and whites.

In the material studied, there were about twice as many males as females, and among these the incidence of intestinal tuberculosis was 74.6 per cent in the females and 68.2 per cent in the males.

The incidence in the white race was 66.4 per cent; Negroes 77.3 per cent.

4. Although caseous pneumonic tuberculosis is the type of pulmonary disease most frequently associated with intestinal tuberculosis, the cases with acute miliary tuberculosis showed a surprisingly high incidence of 63.8 per cent intestinal involvement.

Most workers believe that direct contact of the

tubercle bacilli in the sputum on the intestinal mucosa is the most important single factor in producing intestinal tuberculosis. A few believe that hematogenous dissemination is the chief method. With that in mind, the cases studied were divided according to the character of their pulmonary disease.

The high incidence in acute miliary tuberculosis seems to indicate that the hematogenous route of intestinal involvement is much more common than generally supposed. One is also led to suspect that the bacilli-laden sputum that is swallowed often only modifies the extent and size of the intestinal ulcers and is not itself the cause of intestinal tuberculosis.

5. The incidence of caseous mesenteric lymph nodes and miliary foci in the liver and spleen increases with the severity of intestinal tuberculosis.

Caseous mesenteric lymph nodes were found in 43 per cent of the very far advanced cases. The high incidence of miliary foci in the liver (49.4 per cent) and spleen (47.8 per cent) is interesting when it is considered that only routine sections were taken—more careful search would probably have yielded a high incidence.

6. Intestinal tuberculosis is most frequent in the ileocecal region.

In this series of 734 cases of intestinal tuberculosis the ileum was involved 652 times and the cecum 555 times. Extension of the tuberculous process is more frequently analward than toward the stomach, which was involved in only four cases. The small intestine was involved alone more frequently than the large intestine.

The character of the intestinal lesions varies just as in tuberculosis of other parts of the body. The earliest lesions are in the lymphoid tissue of the submucosa principally in Peyer's patches. The area of caseation finally involves the mucosa and ulceration results. The healing process consists of fibrosis of the specific tubercles followed by epithelial regeneration. The necrotic material sloughs out and the contraction of the fibrous tissue tends to approximate the edges of the ulcer. The uninjured epithelial cells at the border of the ulcer creep in and finally cover the floor of the ulcer.

7. Perforation of a tuberculous ulcer occurred in 28, or 3.81 per cent, of the cases with intestinal tuberculosis. It occurred most frequently in the ileum.

Perforation caused a generalized peritonitis in 10 cases, a localized peritonitis in 16 cases. Three perforations were extraperitoneal. Twice, ulcers in the rectum penetrated into the perirectal tissues and once an ulcer in the cecum penetrated retroperitoneally. Perforation occurred most often in the ileum and next more often in the appendix.

8. Generalized tuberculous peritonitis except in those cases due to perforation of a tuberculous ulcer, is not related to intestinal tuberculosis.

Tuberculous peritonitis, not associated with intestinal tuberculosis, occurred in 52 instances.

9. The incidence and severity of intestinal tuberculosis is much less in those cases which have had pulmonary symptoms one to two years.

The frequency of intestinal tuberculosis is related to the duration of the pulmonary disease. The highest incidence of intestinal tuberculosis occurs in cases with pulmonary symptoms of one year to 23 months duration before death. As the duration of pulmonary symptoms increases the incidence and severity of intestinal tuberculosis decreases. Just why cases of long duration should not develop intestinal tuberculosis in spite of persistently positive sputum is not known.

10. The incidence and severity of intestinal tuberculosis is directly related to the positivity of the sputum.

The frequency and severity of intestinal tuberculosis was correlated with the degree of positivity of the sputum. Except for those cases which were positive on concentration only, the incidence and extent of intestinal tuberculosis increases as the number of tubercle bacilli in the sputum increases. Cases that had a mean Gaffky count of VII-X had an incidence of 83.5 per cent intestinal involvement. Cases that were negative on concentration had an incidence of 40.4 per cent.

11. The symptoms of intestinal tuberculosis are frequently misleading and are often present in cases without any intestinal involvement.

Symptoms and signs may be bizarre, slight and easily overlooked. Symptoms became more frequent as the severity of intestinal involvement increased.

12. The diagnosis of intestinal tuberculosis based on röentgenograms was inaccurate in 29.2 per cent of the 113 cases studied röentgenographically and at postmortem.

Another writer found the intestinal x-ray unreliable in 52 per cent of his autopsy series of 67 cases. The autopsy fails to substantiate many cases

diagnosed as intestinal tuberculosis on x-ray. It is admitted that pseudo filling defects seen on the x-ray may have been misinterpreted as evidence of organic disease, since fluoroscopy as recommended by Brown and Sampson was not done.

The other factor that accounts for some of the disagreement found between x-ray and autopsy is the fact that an attempt was made to diagnose tuberculosis of the ileum on x-ray. The x-ray criteria of tuberculosis of the ileum—dilatation, segmentation, and stasis, are not as accurate as the criteria for diagnosis in the cecum and colon.

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Army Medical Library

The continued delay of Congress in appropriating the necessary funds for building adequate quarters for the Army Medical Library is criticized by *The Journal of the American Medical Association* for April 13 in an editorial which states that an invaluable, unique, irreplaceable collection of scientific material "continues to be housed in a veritable fire trap, while immense funds are voted for purposes not nearly so pressing:

The editorial says:

"More delay in providing adequate quarters for the Army Medical Library now results from the action of the House Committee on Appropriations on President Roosevelt's budget recommendation that $600,000 be made available for the purchase of a site and for the drafting of plans for the new building. The committee recommended that only $130,000 be now made available and earmarked this sum for use in the preparation of plans.

"This recommendation was predicated partly on the view that the act of the Seventy-Fifth Congress authorizing the construction of the new building contemplated the use of government owned property and hence did not authorize an appropriation for the acquisition of a site. The committee pointed to the fact too that the act authorized the Secretary of War to construct the building and not the Public Buildings Administration as proposed in the budget. The Military Establishment Appropriation Bill, H. R. 9209, embodying the recommendation of the committee, has passed the House of Representatives and is pending in the Senate Committee on Appropriations."

TWENTY-FIVE YEARS AGO

(May, 1915 Journal)

Original articles in the May, 1915 JOURNAL were by Dr. Tom A. Williams, Harvard University; Dr. L. V. Guthrie, Huntington; Dr. J. Schwinn, Wheeling; Dr. S. L. Cherry, Clarksburg; Dr. C. R. Foutche, Berkeley Springs, and Dr. J. E. McDonald, Logan, West Virginia.

* * * *

The State Meeting was held in Huntington, May 12 to 14, 1915. Dr. J. Howard Anderson's editorial ran: "We have on our program such men as George W. Crile, S. G. Gant of New York, William M. Beach of Pittsburgh, John J. Gelbride of Philadelphia, Thomas S. Cullen of Baltimore, E. O. Smith of Cincinnati. * * *

"Then, too, in conjunction with our State Meeting, we are having a state-wide First Aid and Mine Rescue Contest, given under the auspices of the Norfolk and Western Coal Field Operators, and the Chamber of Commerce of Huntington.

"You have heard of mine explosions. Come and see how they happen. It will be demonstrated by the U. S. Bureau of Mines—who will send their 'Explosion Gallery' all the way from the U. S. Arsenal at Pittsburgh for this demonstration.

"And Mr. Secretary of your local society, you are a delegate of virtue of your office. Don't you fail to come. You can meet other secretaries and be of mutual benefit to each other. We will try to have a little conference for you which will not interfere with your enjoying the general program. * * *"

* * * *

"The Barbour-Randolph-Tucker County Medical Society held its regular quarterly meeting at Elkins, in the parlors of Hotel Randolph on April 6th.

"We had a good program, but we are pained to note that not only the majority of the members of the society, but even those in the town in which the meetings are held are wholly indifferent as to the meetings, and while often excusing themselves on the plea of work, yet we note that if there is a horse race, a chicken show or a ball game, generally the men who are too busy to attend society meetings can find ample time to be on hand on time, and all the time."

President's Page

The cost of medicine prescribed by the average physician of today is at such a high level that a considerable proportion of the public is endeavoring to diagnose and treat their own ills. Whether we realize it or not, we, as physicians, are largely responsible for the high cost of medicine by prescribing specialties and proprietary preparations that have no particular scientific foundation. All too many of us are depending on detail men for alleged new methods of treatment.

Realizing how gullible so many of us are, drug manufacturers are constantly coining new names for old formulæ. Any competent druggist can cite examples where two or three identical preparations are put out under different names by the same company with a wide variance in prices. This is particularly distressing to the druggists who must stock their shelves with preparations that are in occasional demand. The demand for many such preparations is usually negligible after the next visit of the detail man with more new preparations.

While it is not our duty to fight the battle of the druggist, we share with them a mutual problem insofar as the problem affects the cost of medicine which we prescribe for our patients. The druggists are alarmed. They continually point out that if we would follow the pharmacopeia we would reduce the cost of medicines from 50 to 60 per cent. Druggists point out the comparison between luminal and phenobarbital. Druggists say these two substances are absolutely identical. Yet one-half gr. luminal tablet costs the druggist $1.25 per hundred while one-half gr. phenobarbital tablet costs the druggist twenty-five cents per hundred. There are scores of similar comparisons.

We feel that many pharmaceutical houses are using the doctor unfairly to advertise their products. Many of their specialty preparations bear a simple trade name which is stamped on their bottles and on their tablets. After the physicians have prescribed such preparations a short time, it is often found that the over the counter sale is far greater than that dispensed by the pharmacists on prescription. After the doctors have provided the necessary impetus for one specialty product, they are immediately detailed to launch a new one.

It should be pointed out that any specialty preparation with a real scientific background is deserving of our attention and support. However, if we expect to keep our practice on a high professional level, it is high time that we look this problem in the face and study the formulæ of specialty preparations before we accept the romantic explanation of their representatives.

Frank V. Langfitt

President.

West Virginia Medical Journal

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THE STATE MEETING

With eleven of the nation's outstanding specialists on the program, with more than 30 scientific exhibits being arranged, with 40 technical exhibits already reserved, and with an anticipated medical attendance of 800 doctors, the joint meeting of the Virginia and West Virginia Medical Associations at White Sulphur Springs next July 29-31 promises to be a history making event. Information from our own county societies indicates a possible Association record in convention registration.

For the benefit of our readers who may have overlooked the list of speakers published in the April issue, we will again run rapidly over this group. Dr. Irvin Abell, Louisville, will deliver the Oration on Surgery, and Dr. Paul White of the Massachusetts General Hospital, Boston, will deliver the Oration on Medicine. Dr. Harvey B. Stone of Johns Hopkins, Baltimore, will lecture on "Appendicitis", and Dr. Walter Alvarez of the Mayo Clinic will talk on "The Patient Who Is Always Complaining."

The specialty assignments include Dr. Ross Golden, New York City, on Radiology; Dr. Ralph M. Tyson, Baltimore, on Pediatrics; Dr. Wesley C. Bowers, New York City, on Eye, Ear, Nose and Throat; Dr. A. I. Folsom, Dallas, Texas, on Urology; Dr. George E. Bennett, Baltimore, on Orthopedics; Dr. Frederick C. Irving, Boston, on Obstetrics, and Dr. Karl M. Bowman, New York City, on Neuropsychiatry.

Plans for a match golf tournament between the two state societies are now being worked out. The tournament will be played on Sunday, July 28, the day preceding the opening of the first scientific assembly. The tournament scores will probably be used to determine the Association's 1940 champion.

All general meetings of the two societies will be held during the morning hours from 9:30 until 12:30 o'clock. The nine specialty sections will be held during the three afternoons, with three section meetings each afternoon. These will be arranged, so far as possible, to avoid conflicting interests of the specialties.

The House of Delegates of the West Virginia State Medical Association will hold its first meeting on Monday afternoon, July 29, at 4:30 o'clock, and its second and final meeting on Tuesday evening immediately following the addresses of the presidents of the two societies. The annual convention banquet and ball will be held on Wednesday evening, July 31.

REFRESHER COURSES

The West Virginia State Medical Association, in conjunction with the State Department of Health, is again offering postgraduate refresher courses for a period of five weeks starting July 14, 1940. Following the procedure of the past several years, the state will be divided into a northern and southern circuit and the courses will be given at five different centers in each circuit. The courses will be presented one day each week at each center.

Heretofore the subjects have dealt exclusively with infant and maternal welfare. The coming courses will, for the first time, cover a larger variety of topics and will endeavor to bring out points of practical interest in rural and industrial medicine. The 1940 subjects, which have already aroused much enthusiasm, will be:

"Sulfanilamide and Sulfapyridine in Childhood Infections", "Obstetrical Hemorrhage",

"Diagnosis and Treatment of Cardiovascular Syphilis", "Upper Respiratory Infections in Children", "Childhood Tuberculosis or Childhood Endocrinology."

For the past several years there has been a growing feeling that a doctors' license should not be granted on a lifetime basis, but should be renewable periodically, contingent upon postgraduate or refresher courses taken by the physician. This was brought out in some detail by Dr. Langfitt, Association president, on his recent tour of southern county medical societies. Both Dr. Langfitt and the Association's Postgraduate Committee feel that the summer postgraduate courses offered by the Association, if properly supported, will eliminate the demand for periodic licensure. The postgraduate certificates presented by the Association to all physicians who attend the complete series may eventually be used in place of renewable licenses.

The increased variety of subjects for 1940 is a forerunner of what to expect in 1941 and succeeding years if the plans of the Association's Postgraduate Committee are successful. This committee is now working on a five-year program for West Virginia which will cover the entire field of postgraduate education. The committee's program will be presented at the White Sulphur Springs meeting in July.

JOE BONOMO, INC.

A new medical magazine titled *"Good Healthkeeping"* will be on the newsstands in June. It will be brought out by the Joe Bonomo Publications, Inc., of New York City and, according to a recent announcement, it will "print nothing that does not have the unqualified endorsement of experienced physicians." So far, so good.

If *"Good Healthkeeping"* lives up to the ideals expressed in the Bonomo announcements, it will indeed serve a useful lay purpose. However, we feel that the attention of our readers should be called to some of the former Bonomo magazines before they extend the glad hand of welcome to this newest offering. We suggest that judgment of *"Good Healthkeeping"* be reserved until it makes its appearance. We make this suggestion in the belief that a number of our Association members have already been asked either to subscribe to or write for the new publication.

Some of the earlier Joe Bonomo publications were *"The Best That's In You,"* a semi-health job with a picture of Joe on the cover displaying a fine figure and strong-man biceps. Another publication was *"Beautify Your Figure,"* profusely illustrated with various poses of the feminine figure. Still another of the Bonomo offerings is *"Make Up and Live,"* portraying feminine charm for the masculine eye. These three magazines may possibly serve a useful purpose, but they are hardly the type to receive "the unqualified endorsement of experienced physicians," depending, of course, on what the physicians are experienced in. If *"Good Healthkeeping"* follows the pattern of these other Bonomo publications, it will probably contribute more to the Bonomo treasury than it will to the public health. We say again, however, that if it lives up to the claims of its publishers, it may be a credible magazine. We will wait and see.

BEWARE—A "SLICKER" AT WORK

A man using the name R. H. Passmore recently worked a "slicker" on several Charleston doctors and perhaps he may be plying his trade in other sections of West Virginia. Doctors are urged to be on the lookout for Passmore and should get in touch with local authorities if approached by him.

During his brief sojourn in Charleston, Passmore represented himself as being an agent of the Hoover Company, manufacturer of uniforms. He presented what appeared to be adequate credentials. His prices were much below the standard charges for Hoover uniforms, which Passmore explained as the start of a new policy in developing West Vir-

ginia territory. Checks were given Passmore in payment for orders. The checks were later cashed at a Charleston bank. Later inquiries revealed that Passmore had never worked for the Hoover Company and had no connection with this organization. It is understood that the company made good several of the orders even though not responsible for Passmore's activities.

Passmore is described as being about forty years of age and weighing about 160 pounds. He has dark hair, rather sparse and graying at the temples. He has a nice appearance and a very pleasing personality, according to information furnished the JOURNAL. Further information about him may be secured through the office of the executive secretary.

Hirestra Laboratories

"*The Journal* (of the American Medical Association) published a critical editorial in the issue of April 9, 1938, on 'Endocreme,' a cosmetic containing the female sex hormone estradiol," an editorial in its April 20 issue says.

"On August 18, 1938, the Hirestra Laboratories, Inc., the company which distributed and sold this face cream, filed two suits in the Federal Court at Chicago against the American Medical Association, the editor of *The Journal*, and others. One of the suits was in equity and asked for an injunction and damages on the theory that the defendants had conspired to injure the business of the plaintiff. The other suit was in law and asked damages of three million dollars on the theory that the defendants had libeled the plaintiff and had conspired to injure and destroy the business of the plaintiff (the Hirestra Laboratories).

"The suit in equity was referred to a federal Master in Chancery to hear evidence and report, together with his findings of fact, propositions of law and recommendations in the premises. In the proceedings before the Master in Chancery the plaintiff took the depositions of various witnesses throughout the United States and many witnesses appeared in person.

"Before the evidence of plaintiff was concluded before the Master, and about the time the lawsuit was to come on for trial, the plaintiff decided to dismiss both of the suits."

Obituaries

Doctor William T. Cameron

Dr. William Tate Cameron, College of Physicians and Surgeons, Baltimore, Maryland, 1889, died at the home of his daughter Mrs. B. L. Liggett, Mill Creek, West Virginia, April 12, 1940, of a cerebral hemorrhage.

Dr. Cameron was born on Jackson's River near Warm Springs, Virginia, October 3, 1866. He attended Virginia Military Institute at Lexington, was a registered pharmacist, having studied pharmacy at the Richmond School of Pharmacy, Richmond, Virginia.

Soon after receiving his medical degree Dr. Cameron began the practice of medicine in the rugged mountainous section of West Virginia in the vicinity of what is now Mace. He served the people of a vast territory, including parts of three counties for over fifty years. At the beginning of the present century Dr. Cameron was very active, the country was thinly populated and his only means of transportation was horseback or buggy. He was a large man and at one time kept four riding horses.

Dr. Cameron was one of those country physicians who knew the human side of medicine. His sympathy, cheer and optimism were well known and appreciated by all who knew him as patient or friend. Owing to ill health he gave up the practice of medicine one year ago and made his home with his daughter.

Doctor Horace B. Price

Dr. Horace B. Price, prominent Parkersburg physician and one of the oldest practicing physicians in West Virginia, died at his home on March 24, following a two weeks' illness of pneumonia. Dr. Price was 83 years of age and continued in practice until the onset of his last illness. He was an honorary member of the State Association, a past president of the Parkersburg Academy of Medicine, and a former assistant superintendent of Spencer State Hospital.

Dr. Price was born at Mineral Wells, West Virginia in 1857 and received his academic degree from Dennison University in Ohio. He graduated from Miami Medical College of Cincinnati in 1882, and received his West Virginia license the same year. He practiced for several years at Lockhart in Jackson county, before moving to Parkersburg.

County Society News

Cabell County

The regular monthly meeting of the Cabell County Medical Society was held at the Governor Cabell Hotel, Huntington, on the evening of April 11, 1940. The essayist of the evening was Dr. Edwin Humphrey of Huntington, who gave an interesting and instructive address on "Normal Labor."

Dr. George M. Lyon, Huntington, has been selected as one of seven American pediatricians to discuss a symposium on health problems in education which will be presented at the Hotel Roosevelt in New York on the afternoon of June 11, 1940. The symposium is being put on jointly by the National Education Association and the American Medical Association.

J. L. HUTCHINSON, *Secretary.*

Fayette County

Dr. S. H. Scarr, associate professor of Gynecology and Obstetrics, of the University of Louisville, was the guest speaker at the April 9 meeting of the Fayette County Medical Society, which was held at Conley Hall in Montgomery. Dr. Scarr spoke on "The Late Toxemias of Pregnancy." This interesting presentation was discussed by Drs. H. H. Ritter, Guy Daugherty, C. E. Watkins, W. E. Hoffman, and Henry Baum. Forty members were present.

The committee endorsed the summer postgraduate courses offered to Fayette county by the State Association and appointed a postgraduate committee consisting of Dr. Philip Becker, Kimberly; Dr. Guy Daugherty, Fayetteville, and Dr. J. N. Reeves, Oak Hill.

The next meeting will be held on May 7 at the Oak Hill Methodist Church, Oak Hill, and Dr. H. J. Gerstenberger of the Western Reserve Medical School, Professor of Pediatrics, will speak on "Diarrheas of Infancy." The meeting will be held at eight o'clock. Discussion will be led by Drs. Van Pelt, E. E. Jones, Jr., Claude Frazier and T. B. Pope.

The last meeting of the current season will be held on June 25, at which time Dr. Warren T. Vaughan of Richmond will speak on "The Practical Side of Allergy." Following the June 25 meeting, no further sessions of this society will be held until next September. G. A. DANIELS, *Secretary.*

Greenbrier Valley

A meeting of the Greenbrier Valley Medical Society was held April 15, 1940, at the Medical Department of The Greenbrier Hotel, White Sulphur Springs, West Virginia.

The meeting was called to order at 8:00 p. m. by the president, Dr. Guy Hinsdale. Present: Dr. Frank Clark Langfitt, Clarksburg, president of the West Virginia State Medical Society; Mr. Joe Savage, secretary of the West Virginia State Medical Society; Dr. George M. Caldwell of The Greenbrier; Dr. Herbert Duncan, in charge of the Public Health Service, Lewisburg; Dr. A. D. Ferrell, Dr. Morris Ferrell, Dr. Charles W. Lemon and Dr. D. G. Preson, of Lewisburg; Dr. H. L. Goodman, Dr. Harold D. Gunning, and Dr. A. G. Lanham, secretary of the society, of Ronceverte; Dr. Stephen Mamick of White Sulphur Springs.

Dr. Langfitt and Mr. Savage were called upon to describe to the society some of their official activities and observations involving national, state and local medical problems. Federal legislation leads to two types of laws. The minority are constructive and the others may be classed as destructive. Among the latter are the proposed Wagner Health Act designed to put in subjection the medical profession.

Dr. Langfitt stated that in the United States during the last hundred years the average span of life had risen from 35 years to 62 years; that in a country such as Germany, where socialized medicine or national control is carried to an extreme, the death rate is four times that in the United States. That is what we do not want.

The eight points in the platform of the A. M. A. were thoroughly endorsed; financial and political support were urgently needed. Dr. Langfitt endorsed the work of the educational committees; the arrangements for the summer postgraduate medical courses, which are now planned for five medical centers in the state; also the most excellent WEST VIRGINIA MEDICAL JOURNAL which he claimed is second to none of the state journals.

The practice of detail men in exploiting doctors in the interest of drug houses was condemned and especially the great variety of names and combinations adopted by drug houses promoting the use of some special article, *e.g.*, thiamin chloride, now marketed in various dosages and combinations under special labels. All this leads to confusion and unnecessary cost of medication.

Dr. Langfitt urged support of the joint meeting of the Virginia and West Virginia State Medical Societies, July 29, 30 and 31. The active support of the county societies is essential to the success of the state society and, through it, of the national.

Dr. Hinsdale asked for an expression of opinion about continuing to have joint meetings of the local Greenbrier Valley Medical Society with the Alleghany-Bath Medical Society and this was unanimously endorsed.

GUY HINSDALE, *President.*

Kanawha County

The regular monthly meeting of the Kanawha County Medical Society was held at the Daniel Boone Hotel, Charleston, on the evening of April 9, with more than 100 physicians in attendance. At this meeting the Kanawha society was host to the West Virginia Society of Industrial Physicians and Surgeons and the Medical Examiners of the Workmen's Compensation Department.

The guest speaker was Dr. Sumner L. Koch, Chicago, Associate Editor of Surgery, Gynecology and Obstetrics, and Associate Professor of Surgery at Northwestern University. His subject was "The Management of Recent Injuries." A dinner in honor of Dr. Koch preceded the meeting.

Dr. Koch also spoke at a special meeting of the Society of Industrial Physicians and Surgeons at five o'clock on April 9, on the subject "The Care of Infected Wounds in Industry."

W. A. THORNHILL, JR., *Secretary.*

Logan County

The Logan County Medical Society held its regular meeting on Monday evening, April 8, at the Aracoma Hotel, Logan.

The guest speakers were Drs. Francis Scott and Ivan Harwood, both of Huntington, who talked on "Backache."

The committee voted to accept the summer postgraduate lectures offered to Logan county by the State Association.

J. W. CARNEY, *Secretary.*

Marshall County

The regular meeting of the Marshall County Medical Society was held at the Elks' Club, Moundsville, on April 9, 1940. The society voted to sponsor the summer postgraduate courses offered Marshall county by the State Association. The members also voted to have a "Doctor's Holiday" each Thursday afternoon during the entire year, instead of just during the summer months. The secretary was instructed to name two doctors each week, starting in alphabetical order, to be available in case of emergency.

J. A. STRIEBICH, *Secretary.*

McDowell County

The McDowell County Medical Society met at the Memorial Building in Welch on April 16 with Dr. Frank V. Langfitt of Clarksburg, State Association president, as the guest speaker. Dr. Langfitt discussed various phases of medical economics, covering the subject from the viewpoint of national, state, and county problems.

Mr. Joe W. Savage, executive secretary, was also present and spoke briefly. An interesting discussion of state and county problems followed which was participated in by many of the members. There was a good attendance and a buffet lunch was served following the meeting.

J. R. VERMILLION, *Secretary.*

Mercer County

The regular monthly meeting of the Mercer County Medical Society was held in the Municipal Building in Bluefield, on March 28, 1940, with an excellent attendance. A letter from the secretary of the Logan County Medical Society requesting that the society instruct their delegates to vote to change the meeting place of the State Society to Charleston in 1941 was read. The society voted to send the delegates uninstructed.

The guest speakers were Dr. James King and Dr. F. A. Strickler of Radford, Virginia. Dr. King reported the treatment of thirty-eight cases of dementia praecox and manic senile psychosis with metrazol shock therapy. He illustrated his talk with moving pictures. Dr. F. A. Strickler of Radford, Virginia, spoke on "Bromide Intoxication." The papers were discussed by society members.

A buffet luncheon was served after the meeting.

FRANK J. HOLROYD, *Secretary.*

Mingo County

A special meeting of the Mingo County Medical Society was held at the Williamson Memorial Hospital at four o'clock on the afternoon of April 17. The society was honored in having the president of the State Association, Dr. Frank V. Langfitt of Clarksburg, who spoke at some length on "County,

State and National Problems of Interest to the Profession." Following this, there was an interesting discussion of medical problems, particularly in reference to the handling of DPA patients in Mingo county. Mr. Joe W. Savage, state secretary, was present and participated in the discussion.

After the meeting, the hospital served a bountiful dinner to the doctors and guests in attendance.

GEORGE W. EASLEY, *Secretary*.

Monongalia County

Dr. John C. Kerr, of Clarksburg, was the guest speaker at the April 2 meeting of the Monongalia County Medical Society, which was held at the Hotel Morgan, Morgantown. Dinner was served at six o'clock, following which Dr. Kerr gave a highly interesting paper on "Some Dermatological Problems." An interesting discussion followed.

CARL E. JOHNSON, *Secretary*.

Ohio County

Dr. George P. Muller, Professor of Surgery, Jefferson Medical College, Philadelphia, was the guest speaker at the April 5 meeting of the Ohio County Medical Society which was held in the solarium of the Ohio Valley General Hospital at Wheeling. His subject was "Acute Appendicitis." This was a very interesting presentation. Discussion was led by Dr. E. M. Phillips and Dr. E. S. Bippus.

Dr. L. J. Karnosh, Associate Professor of Nervous Diseases at Western Reserve University, Cleveland, was the guest speaker at the April 19 meeting. His subject was "Tumors of the Neck."

The final scientific meeting of the spring season will be held on May 3 with Dr. Victor Carabba, Assistant Professor of Surgery, New York University as the essayist. Dr. Carabba's subject will be "Electrosurgical Aseptic Intestinal Anastomosis." The annual banquet and golf tournament will be held at the Wheeling Country Club on May 17.

R. W. LUKENS, *Secretary*.

Parkersburg Academy

Dr. Walter E. Lee, Professor of Surgery, Postgraduate School of the University of Pennsylvania, addressed the Academy of Medicine of Parkersburg at the April 3 meeting which was held at St. Joseph's Hospital. He presented a highly interesting paper on "Surgical Infections—Chemotherapy."

The final meeting of the 1940 spring season will be the business meeting of the Academy at the City Hospital on May first.

A. C. WOOFTER, *Secretary*.

Raleigh County

The regular monthly meeting of the Raleigh County Medical Society was held at the Black Knight Country Club, Beckley, on the evening of April 18 with 40 members in attendance. The program was preceded by a banquet served at 7:30.

The guest speaker was Dr. Frank V. Langfitt, Clarksburg, president of the West Virginia State Medical Association. Dr. Langfitt gave a most instructive talk on national, state and county medical society problems, particularly in regard to legislative and political matters.

During the business session, the society voted to sponsor the summer postgraduate courses offered by the State Association. The society also voted in favor of White Sulphur Springs as the place for the 1941 state meeting.

E. N. DUPUY, *Secretary*.

Wyoming County

A called meeting of the Wyoming County Medical Society was held at the Mullens Hotel at noon on April 16. Following luncheon, an informal discussion of problems relating to the medical profession was carried on. The society was honored in having Dr. Frank V. Langfitt, Association president, present to lead this discussion. Many matters of state and county interest were brought up. Mr. Joe Savage, state secretary, was also present on this occasion.

WARD WYLIE, *Secretary*.

Stabilizing Circulation in Brain

Means of determining the state of the blood circulation in the brain during fever treatment and of maintaining it at its normal level are described by Oscar T. Wood, M.D., and Augustus McCravey, M.D., Philadelphia, in *The Journal of the American Medical Association* for April 13.

By properly timed spinal drainage, blood pressure and volume relationships within the brain can be maintained at a normal level and the dangerous phases of too little or too much blood therein can be prevented.

General News

Coming Meetings

West Virginia State Medical Association - Medical Society of Virginia, White Sulphur Springs, West Virginia, July 29, 30, 31, 1940.

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American Medical Association, New York City, Headquarters, Waldorf Astoria Hotel, June 10-14, 1940.

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The American Medical Golfing Association, twenty-sixth annual tournament at Winged Foot Golf Club, Mamaroneck, New York, Monday, June 10, 1940. Open to A. M. A. Fellows of all states. Fifty trophies. Applications may be secured from W. J. Burns, Secretary, 2020 Olds Tower, Lansing, Michigan.

* * * *

American Association of Industrial Physicians and Surgeons, twenty-fifth annual meeting at Hotel Pennsylvania, New York, June 4-7, 1940. This will be a joint meeting with the American Industrial Hygiene Association.

* * * *

The general oral and pathological examinations (Part II) for all candidates, Groups A and B, for the American Board of Obstetrics and Gynecology will be conducted at Atlantic City, New Jersey, from Friday, June 7, through Monday, June 10, 1940. Group A candidates will be examined on June 7 and 8, and Group B candidates on June 9 and 10. Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pa.

* * * *

Jefferson Medical College Alumni Association, reunion dinner at seven p. m., Wednesday, June 12, Murray Hill Hotel, New York City. Make reservations through the hotel.

Letters From Relief Clients

Letters from relief clients and those who desire to become relief clients are always of interest. From time to time the JOURNAL has published excerpts from West Virginia customers. We now find a complete series in the *St. Louis Medical Bulletin*, taken from letters sent to the East St. Louis relief office. We reprint the following:

My husband has worked one shift for about two months and now he has left me and I aint had no pay since he has gone or before either.

Please send me my elopment as I have a four months old baby and he is my only support and I need all I can get every day to by food and keep him in close.

I am a poor woman and all I have is gone.

Both sides of my parents is very poor and I can't expect anything from them as my mother has been in bed for one year with one doctor and she wont change.

Please send a wifes form to fill out.

Please send me a letter and tell me if my husban made application for wife and child.

I have already wrote the President and dont hear from you. I will write to Uncle Same and tell him about both of you.

Mrs has no clothing for a year and has been visited by the clergy regularly.

I cant get no pay. This is my 8th child. What are you going to do about it?

Sir: I am forwarding my marriage certificate and my two children one of whom is a mistake as you can see.

I am writing you to say that my boy was born two years ago and is two years old. When do I get my relief?

I am annoyed to find out you have branded my boy illiterite. Oh! for shame! It is a shame and a dirty like, as I married his father a week before he was born.

In answer to your letter I gave birth to a boy, weighing 10 lbs. 1 oz. I hope youre satisfied.

You have changed my little girl to a boy. Does that many any diff?

I have no children as my husband is a truck driver and works day and nite.

In accordance with your instructions I have given birth to twins in the enclosed envelope.

Graduate Course in Obstetrics

A six weeks' postgraduate course in obstetrics is being offered by the University of Chicago and the Chicago Lying-In Hospital, in cooperation with the Illinois State Department of Health and the Children's Bureau, U. S. Department of Labor. The number accepted for each course will be limited in order that a personal relationship may be maintained between the staff and the physicians. All of the members of the Department of Obstetrics and Gynecology will participate in the program.

The only cost to the physicians is that of board and room, their own personal incidental expenses and a nominal fee of $15. Applications and inquiries should be addressed to: Postgraduate Course, Department of Obstetrics and Gynecology, 5848 Drexel Avenue, Chicago, Illinois.

A. M. A. Approves Reorganization Plan

The activities of the Department of Labor dealing with the welfare of mothers and children should be transferred to the Public Health Service, *The Journal of the American Medical Association* for April 20 says in discussing federal reorganization plans. The editorial says:

"On April 11 President Roosevelt sent to the Congress Reorganization Plan No. IV, which consolidates certain federal agencies and activities. Certain sections of these proposals are of great interest to the medical profession, particularly as they represent an attempt to gather many widely distributed medical functions into a single agency, as recommended by the American Medical Association in its platform. Thus the President said:

" 'Federal Security Agency: The Federal Security Agency has as its major purposes the promotion of social and economic security, educational opportunity, and the health of the citizens. The functions of St. Elizabeths Hospital, Freedmen's Hospital, Howard University, and Columbia Institution for the Deaf plainly come squarely within these purposes. Consequently, I find it necessary and desirable in pursuance of the objectives of the Reorganization Act to transfer to the Federal Security Agency the responsibilities of the Interior Department relating to these institutions. The work of St. Elizabeths Hospital and Freedmen's Hospital is much more akin to the activities of the Public Health Service in the Federal Security Agency than to those of any other Federal establishment. Similarly, Howard University and Columbia Institution for the Deaf can derive more benefit from association with the Office of Education in the Federal Security Agency than with any other Federal organization.

" 'I further propose to transfer to the Federal Security Agency the Food and Drug Administration, with the exception of two activities intimately related to the work of the Department of Agriculture. The work of the Food and Drug Administration is unrelated to the basic functions of the Department of Agriculture. There was, however, no other agency to which these functions more appropriately belonged until the Federal Security Agency was created last year. I now believe that the opportunity for the Food and Drug Administration to develop along increasingly constructive lines lies in this new agency. There is also need for coordination of certain of its functions with those of the Public Health Service. To accomplish these objectives the plan establishes the administration as a separate unit within the Federal Security Agency.'

"In concluding his message the President pointed out that 'the reorganization plans thus far submitted do not exhaust the transfers, consolidations, and abolitions that may be necessary and desirable.' He pointed out also that the act expires on January 20, 1941, and he strongly recommended the reenactment of the Reorganization Act without exemptions so that the structure and management of our government, like the activities and services it performs, might be kept abreast of social and economic change. Perhaps the president has in mind those functions of the Department of Labor particularly concerned with the welfare of mothers and children which belong far more appropriately with the United States Public Health Service."

American College of Physicians

The Twenty-fourth Annual Session of the American College of Physicians was held at Cleveland on April 1-5, 1940. Among the West Virginia Fellows in attendance were: Doctors J. L. Blanton and J. P. Trach, Fairmont; Carl E. Johnson, Morgantown; D. C. Ashton, Beckley; Albert H. Hoge, and Otis G. King, Bluefield; Paul H. Revercomb, H. L. Robertson, Charleston; George P. Evans, H. H. Golz, C. O. Post, Clarksburg; J. P. Helmick, L. R. Lambert and C. W. Waddell, Fairmont; Oscar B. Biern, W. B. Hunter, Walter E. Vest, Walter C. Swann and W. L. Neal, Huntington; J. L. Wade and A. C. Woofter, Parkersburg, and C. B. Chapman, Welch.

West Virginia physicians admitted to Fellowship at the Cleveland meeting were: Dr. A. V. Cadden and Dr. David Salkin, Hopemont; Dr. Frank J. Holroyd, Princeton; Dr. P. A. Tuckwiller, Charleston; Dr. F. R. Whittlesey, Morgantown.

BOOK REVIEW

Synopsis of Pediatrics

Synopsis of Pediatrics, by John Zahorsky, M.D., and T. S. Zahorsky, M.D.; publisher, C. V. Mosby Co., St. Louis, Mo., third edition, 430 pages.

Dr. Zahorsky, for many years, one of the leading pediatricians in St. Louis, has produced for the pediatrician, as well as the general practitioner, a book on pediatrics and its problems. It is filled with common sense and common problems pertaining to every day pediatrics.

This synopsis contains very little theory, but discusses mostly the essential points in symptomatology, diagnosis, and treatment. The entire subject is divided into sixty chapters and written in a style that is easily readable.

One chapter pertaining to therapeutics, describes in detail the various diagnostic procedures related to childhood.

Zahorsky has compiled a remarkable collection of illustrations and colored plates that alone are worth the price of the book. Reference to laboratory data occupies little space and references to the literature are omitted. The chapters on growth, development, and endocrinology are extremely good.

This edition contains many applications of chemotherapy. The synopsis cannot replace the standard pediatric textbooks, but it deserves a place in the practitioner's library.

—JACK BASMAN, M. D.

Treatment by Diet

Treatment by Diet, by Clifford J. Barborka, M. D. This book is unique in the fact that it is comprehensive and yet not complex. Of course, the main emphasis is on the proper use of diet in disease but other factors in nutrition, than the mere supply of food, are well correlated. It is conservative and yet completely revised to include newer knowledge on the relation of food to health. The modern trend toward liberalization of diet is quite evident, for example in treatment of such conditions as nephritis and gall-bladder disease. An excellent discussion of the present knowledge of vitamins includes a presentation of methods of diagnostic aid in specific determination of early vitamin deficiencies. Despite the excellent simplicity of diet prescriptions, great latitude is allowed for individualization of the diet according to special requirements or preferences of the given patient.

Not only would this be a valuable book for the general practitioner but as well for the specialist because in most specialties there are at least a few disease entities in which the importance of diet should be stressed. For the general practitioner the concise chapter on diabetes mellitus alone would justify the cost of the book. It is not only interesting to read but is a fine reference for obtaining a detailed diet for any special problem.

P. A. TUCKWILLER, M. D.

The Vaginal Diaphragm

The Vaginal Diaphragm, Its Fitting and Use in Contraceptive Technique, by Le Mon Clark, M. S., M. D., published by the C. V. Mosby Company, St. Louis, Mo.

The time for debating the pros and cons of contraception has passed. Contraception is now an accepted fact. This being so, the physician who would best serve the needs of his patients needs to be thoroughly informed on the subject. As its title indicates this book deals with the use of the vaginal diaphragm. As any practitioner having to do with contraception is well aware, there are diaphragms and diaphragms. Those sold in drug stores and department stores are to be condemned as utterly unreliable. This book shows that for the best results a diaphragm should be selected that meets the needs of each individual patient. The author discusses simply and clearly the various forms of diaphragms, employment of diaphragms, the use of diaphragm inserters, compares vaginal jellies and creams, giving the advantages and disadvantages and all in all covers the subject in such a way that the possessor of the book is far better fitted to care for these patients.

To this reviewer an added attraction in the book is the fact that the author considers the emotional reaction of the patient and does not treat the subject entirely as one of mechanics. The book is a small one and is illuminatingly illustrated. It is highly recommended to the physician interested in the technique of diaphragm contraception.

Diseases of the Skin

Diseases of the Skin, by Richard L. Sutton and Richard L. Sutton, Jr. Tenth edition. St. Louis: The C. V. Mosby Company, 1939.

This large treatise covers 1,549 pages, contains 1,452 illustrations and 21 colored plates. The excellent illustrations make clear the importance of pictures in the visualization of skin diseases.

In the discussions of the various diseases the physiological approach is utilized with effect. The conditions are viewed as physiological reactions, general as well as local, in which the skin plays often a symptomatic rôle. Causative treatment is in this way emphasized.

Recent and outstanding authorities are freely and extensively quoted without bias. At the end of each chapter are bibliographical references to all authorities quoted, and all authorative articles on the given subject up to 1939; a remarkable index of source material.

The popular subject of allergy, as applied to skin diseases, is thoroughly discussed, and indicating, in the light of our present knowledge, the limitations of the 'skin tests'—particularly foodstuffs—in the detection of allergic offenders.

In the discussion of acne vulgaris special attention is called to the successful use of desiccated thyroid in its control and cure.

In the discussion of syphilis conclusive evidence is presented in support of the continuous and sufficient treatment for its most effective control and cure. All the newer and more promising medicaments are discussed, with the suggestion that mapharsen may soon supplant arsphenamine and neoarsphenamine as the arsenical of choice.

Sulfanilamide has been found effective in the treatment of several skin diseases. Favorable results have been cited in erysipelas, lymphogranuloma inguinale, and pemphigus. The authors suggest suspension of judgment until more clinical data are available.

In addition to comprehensive discussions of all the usual skin diseases of this climate, rare and tropical skin diseases are also considered with equal thoroughness. Furthermore the numerous animal parasites, internal as well as external, which may be associated with skin symptoms, are mentioned.

This complete, up to date, and remarkably interesting treatise will be of great value to any physician who includes the skin among his objects for treatment. M. L. BONAR, M. D.

Woman's Auxiliary

Auxiliary State Program

Mrs. Charles Pickett Corn of Greenville, S. C., president of the Woman's Auxiliary to the Southern Medical Association, will be a guest of honor and one of the principal speakers at the coming convention of the Woman's Auxiliary to the West Virginia Medical Association when it meets jointly with the latter organization and medical groups of Virginia at White Sulphur Springs, July 29, 30 and 31.

Mrs. Corn's address will be given at the luncheon to be tendered by the West Virginia Auxiliary for its Virginia visitors at the Greenbrier Hotel, Tuesday, July 30. Her subject will be "Present Day Opportunities of Service for the Doctor's Wife."

The convention will also hear an address by Mrs. V. E. Holcombe of Charleston, president of the West Virginia Auxiliary and president-elect of the Woman's Auxiliary to the American Medical Association. Mrs. Holcombe will deliver her first address in her state as national president when she speaks at the luncheon to be given at the Greenbrier Hotel by the Virginia Auxiliary, Wednesday noon. She will be the principal speaker for that event.

Advisory committees from medical societies of both Virginia and West Virginia and also the Auxiliarys' national advisors will be guests of honor at both luncheons. Dr. J. R. Bloss, Huntington, is the advisor from the American Medical Association to the West Virginia Auxiliary. Members of the West Virginia advisory committee are Dr. W. A. McMillan, Charleston; Dr. J. S. Klumpp, Huntington; Dr. Philip Johnson, Fairmont; Mrs. Earl Starcher, Earling, and Mrs. F. S. Harkleroad, Beckley.

Delegates to the convention, who are to be chosen by most county auxiliaries during the coming month, will be widely entertained during their visit at White Sulphur Springs, Mrs. James S. Klumpp, convention chairman, has announced. Besides the opening tea Monday afternoon, July 29, to be tendered by the Greenbrier Hotel for the West Virginia and Virginia ladies, there will be several luncheons, informal receptions, dances, a bridge party, and an extensive sports program.

The annual golf tournament will be held Tuesday afternoon at 3:30 o'clock to be followed the same evening by bridge. On Wednesday afternoon there will be tennis, swimming, and other sports events. The annual banquet and dance given by the medical society for its delegates and their wives will follow on Wednesday night.

A. M. A. Reservations

The Eighteenth Annual Convention of the Women's Auxiliary to the American Medical Association will be held in New York City, June 10 to 14, 1940. Headquarters will be in the Hotel Pennsylvania. In view of the fact that the second edition of the World's Fair will accelerate advance hotel reservations, it is suggested that AMA Auxiliary reservations be made immediately, through the Housing Bureau, which has been set up by the AMA, namely, Dr. Peter Irving, Room 1036, 233 Broadway, New York City.

Marion County

The Marion County Auxiliary held their regular meeting on March 27 at the Fairmont Hotel, Fairmont. Mrs. J. R. Tuckwiller, president, presided at the meeting. Nineteen members and guests were present and Mr. Joe Savage, state secretary, talked to the body on the subject of "Legislation in Regard to the Medical Profession."

This was a dinner meeting and only routine business was considered.

The next meeting will be held April 30 at Fairmont.

MRS. J. W. DAVIS, *Secretary*.

Parkersburg Academy

The Woman's Auxiliary to the Academy of Medicine of Parkersburg held their regular meeting on April 9 at the Chancellor Hotel, Parkersburg. Mrs. Welch England, president, called the meeting to order and there were 28 members present. Mrs. Charles S. Goodhand gave a very interesting talk on "Surgery in Modern Warfare." Mrs. England also addressed the group on the subject of "Cancer."

New officers were elected and some phases of the state constitution were discussed by the members.

MRS. ARCHBOLD JONES, *Secretary*.

Neighbor Journals

Cabot Criticizes Again

The article entitled "Give the Patient a Break" by Dr. Hugh Cabot, which appeared in the *American Magazine* for April, doubtless caused resentment in the minds of most physicians who happened to read it. It savors too much of washing dirty linen in public, and certainly is an addition to the present-day propaganda to discredit not only the present system of private practice but also the profession in general.

The rank and file of the profession will concur with the author in his attitude toward certain medical practices which he decries. Fee-splitting is one. Exorbitant fees in respect to the patient's ability to pay is another. This is a relative matter, however, for a fee of $100 may be excessive for one patient and one for $10,000 may conceivably be too small for valuable service rendered to one who pays a million dollar income tax. An excessive fee, whether it be $100 or $10,000, if it is more than the patient should be charged, is condemned by the majority of doctors. The bad practice of overcharging is not a valid reason for condemning the fee system.

The author thinks the fee system all wrong, and cites his own experience in charging large fees as proof. If in his own early experience he overcharged, his self-condemnation is justified—not the system.

Group practice is the thing, according to the author. But he is not sure whether the general practitioner can be dispensed with. His contention that the specialist is necessary, is admitted by all. Even his contention that a specialist may see only his specialty, is admitted. This depends, however, on his professional attainments, not on his being a specialist. Others believe in the advantages of medical groups in the practice of medicine. Whether such groups actually lower the cost of care to the patient, is open to argument. The independent doctor can still obtain consultation without difficulty. That the general practitioner can and does care for most medical needs is a fact.

The evils associated with self-styled specialism have long been recognized by the profession and much progress has been made in remedying them. Lack of standards for determining qualifications for specialists were lacking in former days, but have

been established by the profession itself. There is no present need for a member of the profession shouting from the housetops about a situation which is being remedied and which never was a major evil.

The author's main cause for disgruntlement is what he claims to be the opposition of medical societies to the prepayment plan of providing for medical care. Is this an accurate statement?

The American Medical Association has given much thought to the whole subject of methods of payment for medical service and has been consistent in its attitude.

In 1934 the House of Delegates took the stand that medical service should be paid for by the patient according to his income status and medical service should have no connection with cash benefits.

In 1935 the same body reaffirmed its opposition to compulsory sickness insurance, whether conducted by a governmental unit or an industrial body. It encouraged medical organizations to establish plans for providing medical care by voluntary budgeting to meet costs of illness. It also stated that there is nothing inherently good or bad from a medical point of view in different methods of collecting medical fees, providing they are kept separate from any control of practice.

The American Medical Association has been wrongly accused at times of opposing hospital group insurance. Only unsound features of certain plans were criticized.

In 1938 the House of Delegates advocated the principle of cash benefits to members of insurance groups for medical or hospital service in order that the relationship of the patient to the physician or hospital be not disturbed.

This record shows that the national organization is not opposed to prepayment plans *per se*, but is strongly opposed to plans that disturb the fundamental requirement of free choice of physician, place the control of medical care in other hands than the medical profession, and, by insufficient financing or otherwise, result in inferior medical care.

The medical profession has been striving for years, and is today more than ever trying to solve financial problems associated with medical practice, just as more thought is being expended today on economic problems in general. It seems at least poor taste for Dr. Cabot to discredit publicly his own profession in what is doubtless an altruistic attempt on his part to point out a way to provide better medical care at more reasonable cost.—*Minnesota Medicine.*

The "Throw-Away" Problem

For a long time editors of the state medical journals, in company with the editors of the approved journals of national circulation, have concerned themselves with the problem of the "throw-away" publication. What merit these numerous desk-clutterers possess stems from their practice of lifting and abstracting original articles from the legitimate medical press. In the guise of scientific journals they often wax fat and prosperous from their scavenging habit of publishing dubious advertising that has been refused by legitimate journals, thus giving birth and continued life in print to some of the worst fakes and quackeries now known to exist in the dark alleys of medicine.—*Southwestern Medicine.*

Future of American Hospitals

Nearly every plan to improve hospital service in this country that has been advanced by persons outside the ranks of the A. M. A. has included provisions for the radical extension of such service. The original report of the so-called "Technical Committee" advised the expenditure over a period of ten years of more than a billion dollars for hospital construction, designed to increase the nation's hospital facilities by 360,000 beds. More conservatively, President Roosevelt has recently proposed one hundred $100,000 hospitals to be erected at government expense in communities where need exists, and Senator Wagner has included in a new bill before the Senate an appropriation of $10,000,000 for this purpose. The present Wagner Bill appears to be much more specific than the much criticized measure which was before the last Congress. It would put the responsibility of locating and supervising these hospitals upon the United States Public Health Service, assisted by an advisory board. On the face of it, it seems a modest enough beginning with few objectionable features.

The A. M. A. has until now maintained that what was needed was not more hospital beds but the filling of the existing empty beds, many sick people at present being unable to afford hospitalization. The answer to this part of the question is almost at hand. Hospital insurance with its 4,500,000 enrollment is rapidly expanding. Institutions

which formerly worried over unoccupied beds can now in many instances barely accommodate those applying for admission. If hospital insurance continues to spread, an acute deficiency in hospital beds is a contingency that will soon have to be faced. Obviously the 100 small hospitals planned by the government will not meet this need.

The measure before Congress may well prove an entering wedge to government management of our hospitals on a much wider basis than the present Wagner Bill suggests. Against such an eventuality it is possible to conserve hospitals beds by recasting the rules under which the insured now sometimes are unnecessarily admitted to hospitals. It may prove wise for local communities to canvass the possibility of expanding their own hospital facilities, independent of government aid. It would seem safer to adopt the latter alternative.—*Virginia Medical Monthly*.

Modern Medicine's Poll

A lot of people, including minority groups within the profession, have claimed to represent the "average physician." Now the profession has spoken unmistakably for itself in *Modern Medicine's* poll. The results of this referendum establish beyond argument that an overwhelming majority of the nation's medical men favor the A. M. A. program and oppose federalized medicine.

The returns appear even more conclusive when one examines the methods employed by *Modern Medicine* to obtain an honest and accurate cross section of professional opinion. The 20,215 ballots cast were far more than the number required for a Gallup poll. They have been analyzed on the basis of every factor which might conceivably influence medical views; *e.g.*, geographic location, income, nature of practice, length of time in practice, and membership in the A. M. A. Viewed from whatever angle, however, they point to one conclusion: the great majority of American physicians believe federalized medicine will result in a deterioration of professional service and will therefore refuse to "cooperate with a federally * * * controlled program tending toward drastic curtailment of * * * private practice. * * *"

The referendum asks four questions: (1) Do you approve the platform of the American Medical Association? (2) Specifically, do you favor local responsibility * * * for the expenditure of public

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funds allotted to provide medical care for people who need it and cannot afford it? (3) Would you cooperate with a federally administered and controlled legislative program tending toward drastic curtailment of the private practice of medicine? (4) Do you think such a program would result in a deterioration of the quality of medical service available to most people in the United States?

The unanimity of professional opinion on every one of these questions is impressive, to say the least. Eighty-five per cent of the nation's physicians, including non-members of the A. M. A., approve the latter's platform. Eighty-eight per cent favor local responsibility for medical care and believe federal control would result in inferior service. Eighty-five per cent would refuse to cooperate with a federal program threatening the continued existence of private practice.

The strength of medical conviction on these issues is further shown by the fact that virtually the same percentages hold true for all groups within the profession, regardless of the basis of differentiation. To take just one question as an example, 91 per cent of the country doctors and 85 per cent of the successful metropolitan specialists say that they would refuse to implement a plan for federalized medicine. The same stand is taken by 81 per cent of the physicians in practice less than five years and 88 per cent of those in practice over 20, by 83 per cent of those earning less than $4,000 a year and 87 per cent of those earning more, by 86 per cent of the members and 78 per cent of the non-members of the A. M. A.

New York State, with 3,369 ballots, shows the greatest divergence from the general average. Thus its 77 per cent vote in favor of the A. M. A. program compares with a national average of 85 per cent; its 83 per cent endorsement of local responsibility with 88 per cent for the country as a whole. Only 76 per cent of New York State voters believe federal control would cause a deterioration of medical service as compared to 88 per cent for the nation, and only 74 per cent (as compared to the general average of 85 per cent) would refuse to participate in a federalized medical system. This divergence is largely due to the fact that New York State's returns are heavily colored by New York City, where sentiment for state medicine has always been stronger than elsewhere.

Nevertheless, the preponderance of sentiment against federal control of medical care is strong and unmistakable even in New York City. It would warn state and national legislators against the enactment of medical legislation which would not command professional support.—*New York State Journal of Medicine.*

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*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, Vol. 23, No. 2, pages 201-206, March, 1939.

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COMMUNICATIONS

Governmental Medical Practice

There are always those who are willing to surrender local self-government and turn over their affairs to some national authority in exchange for a payment of money out of the federal treasury.

Tyrants always bestride the necks of the people upon the plea that it is for their good. People suffer the rule of tyranny with the hope that it will be easier than to rule themselves.

This represents very clearly the present reaction of hundreds of the members of our Association towards diphtheria immunization.

Today, in the rural areas, in the sections where "list practice" is conducted, and in many of our urban centers we have turned over wholly, or in the main, the business of diphtheria immunization to the state, county, city and school health physicians.

I have asked large numbers of our members in all sections of West Virginia the question—"Why don't you immunize the babies and young children in your practice?" The answer has consistently been—""The health officers are doing most of them so let them do all of them." This reaction of so many of the physicians in our State Association in placidly accepting this governmental supervision of such an integral portion of our practice can but portray the sad lamentation that we are bartering away our freedom.

There is no excuse for any physician not being informed on the modern procedures for the prevention of diphtheria. Absolute eradication of this disease is not being carried to completion because of the indifference and procrastination on the part of the physician. The leadership of the battle against this scourge is in our hands. The measure of the efficiency of any physician is dependent upon his aggressiveness in maintaining a continuous record from year to year of not having a single case of diphtheria in the community he serves. Such a record is possible in only one way; namely, every physician doing obstetrics must keep an age record of the baby so that when the immunizing age is reached the parents are contacted and instructed to bring the child to the office for innoculation.

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STATE HEALTH DEPARTMENT

Charleston, West Virginia

What is the "ideal" age to immunize the baby against diphtheria? On this question opinion differs. The law requires that the child be immunized before entering school or at the age of six years. The State Health Department recommends that a baby be immunized at age six months or as soon thereafter as possible. The health department urges that the physicians do all their immunizations, but clearly advises that the law makes it necessary for public health officers to immunize all unimmunized children. Thus we have pointed out to us clearly our obligations in this matter.

The majority of research workers suggest that a more lasting immunity will result if we immunize during the last half of the second six months of life, that is, between the ages of nine and twelve months. Also that three doses of toxoid be given at intervals of four weeks as a routine.

Our failure to have a continuous system for immunizing our patients when they have reached the proper age for immunization has resulted in diphtheria becoming a public health hazard. Such integral parts of our practice as tuberculosis, typhoid fever, venereal diseases and pneumonia, have alraedy or are rapidly becoming public health hazards. Our present too high maternal and infant mortality and morbidity percentages are being considered as public health hazards.

What is the answer? Slowly but surely our practice is being taken over by the public health officers and the various welfare agencies. In this problem we have a definite responsibility for those who are to come after us as well as to ourselves. Our job is to do this work ourselves so that government interference will be lessened and finally removed from practice of medicine. Let us get our house in order by a united attack on this whole front.

A suggestive plan for this work will be submitted for consideration in a subsequent issue of the JOURNAL.

ANDREW E. AMICK, *Chairman,*
Child Welfare Committee.

Drying by hand towels has no place in any system of dishwashing in public eating places, *The Journal of the American Medical Association* for April 13 says in an editorial summarizing a report of a survey on effective sterilization of utensils in such establishments.

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Metrazol for Acute Alcoholism

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"* * * Immediately after admission such patients were taken to the emergency room and received five cc. of 10 per cent solution of metrazol intravenously, the rate of injection being about 30 seconds for the five cc. We found that in a person narcotized with alcohol, this speed of injection failed to induce a general convulsion. In some individuals, twitching of the face appeared. We refer to this dose time factor as a 'subconvulsive dose'.

"* * * After the injection the patient was kept in the emergency room for a short time and then sent to the ward best suited for his clinical condition. Sedation and other treatment were ordered as indicated. It was found, however, that a large num-

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ber of the excited alcoholics would quiet down in two to ten minutes after the injection and no further special treatment would be necessary. Comatose patients frequently regained consciousness in five to thirty minutes and were able to give an adequate admission history."

In discussing their results these authors state the administration of metrazol to acute alcoholics "was followed by a marked improvement in the clinical state. Such improvement manifested itself in the arousal of the comatose cases, and sedation of the excited group. This improvement was not due to any changes of the concentration of alcohol in the blood. It is suggested that this apparent biphasic effect of metrazol is due to a direct stimulation of the narcotized cerebral cortex. In the mildly narcotized, or agitated group, the improvement is ascribed to a stimulation of the depressed inhibitory centers. Improvement in comatose cases is considered to be due to general stimulation of the central nervous system." (Orenstein, Leo L.; Bowman, Karl M.; Kagan, Julia R.; and Goldfarb, Walter —"Use of Metrazol in the Treatment of Acute Alcoholism." Am. J. of Psychiatry, 96:589 (Nov.) 1939).

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Facial Neuralgia

Fifty-two patients out of fifty-eight obtained relief from twitching facial neuralgia, known as tic douloureux, by treatment with vitamin B_1, Henry Borsook, Ph.D., M. Y. Kremers, M.D., and C. G. Wiggins, D.D.S., Pasadena, Calif., declare in *The Journal of the American Medical Association* for April 13.

The authors point out that their study was prompted by a desire to find some alternative to the most effective treatment yet available for tic douloureux, partial or total severance of the sensory route of the involved nerve. They say that: "Adequate surgical treatment is not available to many

(Continued on page xxxi)

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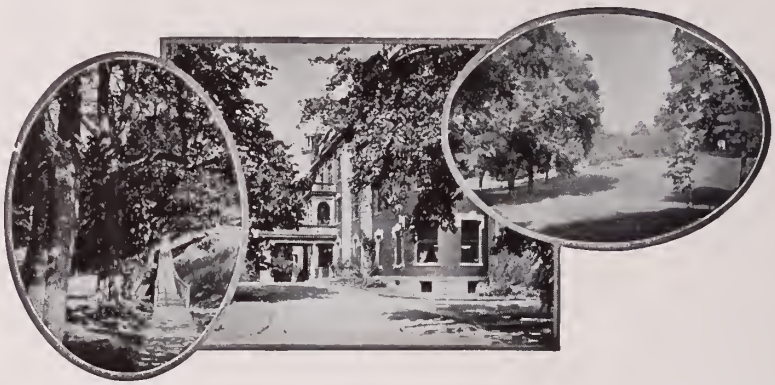

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(Continued from page xxvii)

sufferers with this disease; in some the pain, though extremely troublesome, is hardly so severe as to persuade the patient to submit to the necessary operation.

"Present palliative treatments of trigeminal neuralgia are, on the whole, unsatisfactory. Inhalation of trichloroehtylene, which relieves some sufferers at first, frequently becomes totally ineffective later. The other commonly used palliative treatment, alcohol injection of the trunk of the nerve, often affords relief repeatedly for periods varying from months to years. Yet many patients have reported to us their failure to obtain relief from alcohol injection. Whether this was the fault of the operators or of some peculiarity of their condition we were unable to determine.

"The advantages of the treatment which we have evolved are that it is available everywhere or can be easily made so, and that it can be administered by any practitioner and, with some instruction, even by the patient himself."

Together with the vitamin by vein the patients were put on diets high in vitamin and low in carbohydrate. The patients not relieved by this combination treatment were given injections of concentrated liver extracts. Another supplement to the treatment of all the patients was one ounce of concentrated rice polishings. This supplied daily 1,500 units of vitamin B_1.

Discussing the length of time necessary for improvement to occur with this type of treatment, the California workers say: "There is great variation in the speed at which different patients respond to treatment. Taking all the subjects together the time varied from one to six months. We have not as yet found anything in the symptoms or clinical history from which we can predict the course of recovery of any patient."

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Directory of Physicians in Limited Practice

Advertising space in the directory of physicians in limited practice can be had by communicating with Mr. Joe W. Savage, Secretary-Manager of the West Virginia Medical Journal, Box 787, Charleston, W. Va. The cost is one dollar per month. Space may be had only by members of the West Virginia State Medical Association.

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HYPOTHYROIDISM *

By HAROLD H. GOLZ, M. D.
Clarksburg, West Virginia

THE AUTHOR

Dr. Golz, graduated from Johns Hopkins Medical School, 1934; interned three years Union Memorial Hospital, and Residence in Medicine; Internal Medicine, Clarksburg, associated with Dr. H. H. Haynes. Associate of the American College of Physicians.

The title of this paper is perhaps ill-chosen and might better be called the thyroid deficient state. There has been a certain amount of controversy in the literature as to the proper terminology for the various degrees of thyroid insufficiency. Hurxthal of the Lahey Clinic apparently prefers to call all degrees of thyroid insufficiency myxedema, stating that various other terms such as hypothyroidism are too apt to be confused with hypometabolic states of other origin. Other authors prefer to call all states of thyroid insufficiency hypothyroidism, being disinclined to draw a sharp line of differentiation between the mild hypothyroid state and myxedema which in reality are simply different stages of the same underlying disease process. I have been interested in this problem for several years now, my interest having been stimulated by the high incidence of the disease in this locality and also by the large number of cases which have been previously treated for other disorders, mainly neurasthenia and psychoneurosis. This led me to review 70 cases gathered from my office files and to review also the medical literature on the subject. In the latter endeavor I was surprised to find that the number of articles in the literature is extremely small. Each author not only makes particular note of this fact, but also the fact that the standard textbooks of medicine devote little, if any, space to a discussion of this subject. There seems to be likewise a uniformity of opinion among the various authors that a high percentage of cases are overlooked and the diagnosis not made, apparently because of the fact that the milder hypothyroid states often exhibit rather vague symptoms which do not always suggest the true condition with which we are

*Read before the Harrison County Medical Society on March 7, 1940.

dealing. The symptomatology of the disorder is extremely varied, and in this symptom complex, especially, the patient's presenting symptom or chief complaint is frequently one which will throw the physician off his guard and suggest other disorders and superficially at least be totally unlike the symptoms usually seen in the classical myxedematous state. I believe this is true because there is hardly a physician who is not familiar with the classical symptomatology of myxedema, but some of the milder hypothyroid states present so few of the typical manifestations of myxedema that the possibility of thyroid deficiency often eludes the physician. It seems fitting, therefore, to review at this time the various manifestations of the syndrome as well as the etiological significance and certain important diagnostic and therapeutic aspects of the problem.

ETIOLOGY

In speaking of the etiology we must distinguish between the sporadic and the endemic cases. The former may occur, as the term implies, as isolated cases anywhere the world over. These cases are usually thought to be due to a number of different factors, namely:

First: Sequels of acute thyroiditis.

Second: Manifestations of chronic thyroiditis ascribed to focal infection usually in the upper respiratory or gastrointestinal tracts. In these groups atrophy of the gland is probably responsible.

Third: Cases associated with other endocrine disturbances such as menopause or pituitary dyscrasias.

Fourth: Complications of goiter of the multiple adenomatous or colloid type.

Fifth: As a result of x-ray, radium or surgical therapy for other thyroid disorders.

In this locality we are considerably more concerned with the endemic form than the sporadic type of case. The endemic forms are to be found in abundance in the so-called goiter areas which include primarily the St. Lawrence River and Great Lakes Basin, extending west through Minnesota, the Dakotas and the adjacent Canadian provinces, and also the Pacific Northwest. The slightly less important goiter areas are throughout the Appalachian Mountain region, the Rocky Mountain states, and the Great Central Basin. On the seacoast endemic simple goiters are ordinarily rare in men, and the relatively few cases that are seen usually occur in women in association with pregnancy and lactation. This point is brought out because it has been a rather common experience that wherever endemic simple goiters occur usually many cases of hypothyroidism are to be found. Marine, one of the pioneer investigators of goiter, has made the statement that from the standpoint of physiology and pathology, simple goiter and myxedema are but different stages or degrees of the same nutritional fault, and this certainly would appear to be reasonable in view of the high incidence of both conditions in the same areas. Let us therefore consider, for want of evidence to the contrary, both conditions as having more or less the same etiology.

EXPERIMENTS WITH IODINE

For years it has been thought that the lack of iodine was an essential, if not the primary, factor in the production of these conditions. This theory is now almost 100 years old, and experimental studies too numerous to be mentioned here have seemed to bear out this conclusion. Indeed certain investigators including Marine have carried their experiments to a point where they were almost willing to predict the development of goiter in animals and human beings when the iodine content of the food and water dropped to a certain quantitative level. It was their opinion that this lack could be brought about in one of several ways such as increased demand, for example, pregnancy; faulty alimentary absorption or actual deficient concentration in the food or water. Marine made the statement approximately 15 years ago that he believed that the prevention of endemic cretinism in man is as simple as the prevention of simple goiter and can be accomplished by the same means, namely, administration of adequate amounts of iodine. In 1929 and again

in 1932 Hellwig attempted to prove that iodine deficiency was a direct cause of goiter through feeding experiments on white rats. He fed his rats on an almost completely iodine free diet, and in no instance was he able to produce goiter in these animals which are known to acquire hyperplasia of the thyroid very readily if kept in goitrous regions. These negative results were later confirmed by Hibbard and Jackson. Not only did the strictest iodine-free diet fail to cause hyperplasia, but the thyroid gland seemed even to undergo atrophy, the severity of which was in inverse proportion to the amount of iodine taken and in direct proportion to the length of time the feeding experiments were continued. This iodine deficiency may then prove to be an important factor in the production of hypothyroid states rather than goiter. It is interesting to follow Hellwig's experiments a little farther. Proceeding on a theory as previously advanced that an excess of calcium in drinking water might be a factor, he was able to produce goiters in these white rats by feeding them excessive calcium in their water in association with both an iodine-free and an iodine-rich diet. In the group of animals receiving the iodine-rich and the calcium-rich diets the goiters produced were of the colloid type while in those receiving the calcium-rich iodine-poor diet the goiters were of the hyperplastic type with very little colloid. This seems particularly interesting in that in this region where hypothyroidism is so common the goiters that are usually seen are of the adenomatous or hyperplastic type and colloid goiters are rarely encountered. If conclusions can be drawn from these experiments we would have to say by retrograde reasoning that we are living in an area where there is a relative insufficiency of iodine and relative excess of calcium in the food and water. Heredity is rarely a factor in the production of thyroid insufficiency except in the cases of congenital cretinism where the condition is thought to develop as a result of hypothyroidism in the pregnant woman.

Very little is known of the pathology of this condition since it is being recognized clinically with increasing frequency, and the results of treatment are so satisfactory. Autopsy material in thyroid deficient cases is very limited. What little has been written about the pathology indicates that there occurs a hypoplasia of the follicles of the gland, a diminished number of acini, and considerable increase in the connective tissue.

PATHOLOGIC PHYSIOLOGY

The pathologic physiology concerns itself with the following:

1. Lowered basal metabolic rate.
2. Decreased circulatory efficiency as manifested by slow pulse and diminished amount of blood flow and velocity. The heart is often dilated, and the pulsations as seen under the fluoroscope are feeble. This is further borne out by the presence of low amplitude T waves in the electrocardiogram.
3. An elevated blood cholesterol, the cause of which is not known, but which is definitely not due to the lowered basal metabolic rate since the latter is found in certain other disorders in the absence of hypercholesterinemia.
4. There is increased sugar tolerance as indicated by hypoglycemia and a flat glucose tolerance curve.
5. Water retention in the tissues with diminished blood volume.
6. Secondary or hypochromic anemia probably due to retarded blood formation and inadequate mobilization of iron from the tissues and food.
7. Diminished rate of growth in the hair, nails and skin, and in the bones in children with delayed epiphyseal closure.

The onset is usually between the ages of 30 and 60, perhaps more common after menopause than before, and the ratio between male and female is four or five to one in favor of the women.

Leaving out of consideration for the moment the classical picture of fully developed myxedema it is to be noted that there are many clinical varieties of the milder de-

grees of hypothyroidism. This in all probability is due to the absence of one or all of the more characteristic manifestations of myxedema. The difference furthermore can be accounted for by variations in the degree of thyroid deficiency and in the reactability of the patient. Of the various manifestations one particular symptom of perhaps minor importance to one patient may assume a magnitude in another patient, overshadowing symptoms of more significance from the point of view of diagnosis. That the condition fails to be recognized in many instances may be due partly to this and partly to the failure of the physician to think of the condition when the chief complaint is misleading or the symptoms are vague or of a mild character. In my series of 70 cases, 28 or 40 per cent had been receiving previous medical attention for conditions such as neurasthenia, low blood pressure, etc. Of the entire 70 cases only 23 could be classified as being typical of the frank hypothyroid syndrome while the remaining 47 or 67 per cent were atypical in one or more respects. The most common symptoms in their order of frequency are as follows:

FATIGUE

Most patients usually complain spontaneously or on questioning of tiring easily, ordinarily awakening in the morning as tired as they were when they went to bed the night before even after a good night's sleep. It is an effort to get up. After being up and about for several hours the fatigue gradually lessens and they feel fairly well until mid or late afternoon when they sink again into a state of exhaustion which remains until they go to bed. In my own series this symptom was present in 83 per cent of the cases.

The patients complain of difficulty in thinking and concentration. This is some times the earliest symptom. The memory is apt to the faulty, and drowsiness, some times very marked, is the rule. This symptom was present in 66 per cent of my series. Other authors describe various other nervous manifestations such as psychoses of different types, chief among them depressed states. I personally have not seen this, but do not doubt that it occurs.

Sensitivity to cold is extremely common. The patients perspire but little and much prefer the summer weather to winter.

Dry and coarse skin, and brittle hair and nails are usually encountered. The skin is some times so dry as to be actually scaly. The hair breaks easily and often falls out, and the fingernails crack with very little trauma. These symptoms were present in 71 per cent of my cases.

NERVOUS SYSTEM

Aside from the mental sluggishness, drowsiness and poor memory previously mentioned, headache is a very common and often distressing symptom. It is not infrequently the symptom which brings the patient to the physician. Some patients likewise complain of vertigo, slight deafness and a sensation of pins and needles in the extremities as if they were going to sleep, which undoubtedly is due to insufficient circulation. Not uncommonly the presenting symptom is mental agitation and nervousness. With the diminished basal metabolic rate one would naturally expect these patients to be calm and placid, but many authors lay stress on the fact that nervousness is an extremely common finding and some times so marked as to raise the possibility of hyperthyroidism.

The pulse is usually slow, although in certain instances tachycardia may be the rule. In this connection it should be remembered that the hypothyroid patient may still be excitable and that a rapid pulse when found on first examination may simply be an expression of nervous tension and apprehension over the examination and that the pulse rate under other circumstances might be quite slow. The blood pressure varies widely. In uncomplicated cases both the blood pressure and the pulse pressure are low. Hypertension of varying degrees is some times found, and when present it is due to some complicating cardiovascular disorder. In the more advanced cases the heart is dilated possibly

because of tissue edema, and this when associated with a slow pulse will some times give rise to shortness of breath on exertion. Dyspnea may be the presenting symptom. A secondary or hypochromic anemia is a very common finding, and if this is added to the dilated heart and bradycardia the dyspnea may become quite marked.

In most instances the appetite is poor. Gaseous indigestion and constipation are usually seen.

The joints are some times stiff, and pain may be an outstanding symptom. Indeed thyroid deficiency is often looked upon as being an etiological agent in the development of the hypertrophic or metabolic form of arthritis. If the disorder begins in youth or childhood, delayed closure of the epiphyses is a characteristic finding.

Obesity and/or recent gain in weight are usual in these patients, although in a small percentage of cases marked degrees of underweight are common. It is the latter type of patient who usually also presents a tachycardia and complains of nervousness, all of which direct the physician's attention to hyperthyroidism, particularly if there is an adenomatous enlargement of the gland and he is surprised to learn of a low basal metabolic rate.

GENITOURINARY SYSTEM

If the thyroid deficiency occurs prior to the onset of the menopause, menstrual disturbances are often seen. These disturbances may take any form whatsoever, ranging from total irregularity to menorrhagia and to oligomenorrhea. Sterility and tendency to abort if the patients do become pregnant are common. As a matter of fact some patients' presenting complaint may be inability to become pregnant. Libido is not uncommonly diminished.

Enlargement of the thyroid gland was present in but six or 8.6 per cent of my series, and in every instance this was of the adenomatous type.

In my series of cases the following unusual presenting symptoms were noted: Backache and/or rheumatism, three cases; nervousness, three cases; vertigo, two cases; heart trouble and shortness of breath, five cases, and others complained of such misleading symptoms as irregular menstruation, glycosuria, swelling of the face, high blood pressure, hot flushes, constipation and pruritus ani.

COMPLICATIONS

The complications are few. Untreated cases have been considered by certain authorities to be disposed to the early development of arteriosclerosis. This, however, has not been proven. Congestive heart failure occurring in the course of the fully developed untreated myxedematous state is, however, seen with sufficient frequency to warrant a brief discussion. This complication occurred in two of my cases. The first case was a woman of 53 years, who first consulted a physician complaining of shortness of breath and swelling of the abdomen. The physician reported that she was in a state of obvious heart failure with marked edema of the lower extremities, swollen liver and ascites. The etiology of her cardiac lesion was not clear. Her blood pressure was 140/90 and there was no valve lesion. Her pulse rate at the time she presented herself was 86. The patient was treated by her physician for many months for myocardial insufficiency with rest, digitalis and the usual measures, but she failed to improve very much. After seven months of continuous treatment she still had many of the signs of heart failure, although all of her ascites and much of her edema had gone. I saw this patient for the first time 11 months after she first sought medical aid, and at this time she was still decompensated. A basal metabolism was done and found to be minus 45 per cent. Thyroid extract was prescribed, and the patient made a phenomenal improvement. All signs of cardiac failure disappeared within two weeks, and the patient lost 18 pounds of weight in the first two weeks of treatment due probably to release of retained water in the tissues. Two months after starting thyroid therapy she was able to carry on all of her housework and stated that

she was asymptomatic and felt better than she had at any time for several years. The second case of this type brings out several interesting points. He was a man of 59 years who when first seen was almost in extremis from heart failure. He was markedly edematous and presented all the usual signs of heart failure including orthopnea. Auricular fibrillation was present with an apical pulse rate of 140. The patient was markedly underweight. He gave a history of having had a thyroidectomy performed several years before for hyperthyroidism, and when the hyperthyroid symptoms returned thyroid surgery was again done, this time one year prior to the onset of heart failure. The patient presented no signs or symptoms whatsoever of thyroid insufficiency, and it was thought that his heart failure was due to cardiac damage from two attacks of hyperthyroidism of long standing. The patient was hospitalized and the usual measures to combat heart failure were employed. Digitalis was prescribed. Twelve grains of the powdered leaf of digitalis were given by mouth in divided doses and within 18 hours his pulse rate dropped suddenly to 48, but was perfectly regular. The drug was immediately stopped. Electrocardiogram at this time showed that reversion to normal sinus rhythm had taken place, that no heart block was present. The slow rate was simply a sinus bradycardia. Improvement with the usual methods of treatment was slow, and at this time thyroid insufficiency was first suspected. Following recovery from his dyspnea the basal metabolic rate was found to be minus 40 per cent. Thyroid extract was prescribed. The patient improved very rapidly, and two months later was carrying on his occupation of carpenter without the slightest sign of respiratory embarrassment and stated that he was in better health than he had been since his first thyroid operation some eight years previously. This patient was last seen two years ago. Unfortunately he has not been cooperative in returning for further checkups, but it has been discovered through friends that at this time, some two years later, he is still active and well. These two cases are of exceptional interest since heart failure from myxedema is very rarely seen or described and illustrate the point that digitalis is of no benefit in the myxedema heart. A recent bulletin from the Cleveland Clinic reports eight cases of myxedema heart, none of which had progressed to a state of myocardial insufficiency.

LABORATORY DATA

Certain laboratory procedures are of importance in establishing the diagnosis, and these are:

1. Basal Metabolism: This procedure is of primary importance since it is almost uniformly low with this disorder. It may vary from minus 10 per cent to minus 45 or 50 per cent, depending upon the degree of deficiency. In my series 44 per cent of the cases were between the levels of minus 10 per cent and minus 19 per cent. An additional 40 per cent were between minus 20 per cent and minus 29 per cent, and only six per cent of the cases were below minus 30 per cent. It should be noted that unfamiliarity of the patient with the procedure, apprehension, excitability, etc., may markedly raise the basal metabolic rate. One of my patients who was obviously a thyroid deficient gave a reading of plus 15 per cent on the first test. She tolerated rather large doses of thyroid extract quite well, and after one year of continuous thyroid therapy her basal metabolic rate was found to be minus 15 per cent. This patient had been obviously nervous and apprehensive about the procedure at the time of the original test. It should be brought out that low basal metabolic rates are not diagnostic of thyroid deficiency. It is merely one of the signs of the symptom complex. Some times extremely low basal metabolic rates will be found in inanition and in the course of debilitating diseases when the thyroid gland is normal. I recall distinctly one patient whose basal metabolic rate was minus 35 per cent during the course of a chronic debilitating illness. A physician prescribed

thyroid extract, and the patient's condition very soon became markedly aggravated. There seems to be a compensatory mechanism on the part of nature to lower the basal metabolic rate in debilitating illnesses in an attempt to conserve the bodily resources.

2. Serum cholesterol is practically always high in thyroid deficiency. Here again the test is not pathognomonic as high levels will also be found in arteriosclerosis, nephrosis, nephritis, diabetes and cholelithiasis. If the latter conditions can be ruled out in any given patient, a hypercholesterinemia will be of considerable contributory importance in making a diagnosis of hypothyroidism. I am not prepared to give figures of the blood cholesterol in my series since I have only recently begun to do this test routinely on suspected hypothyroid individuals and the number of observations is not large enough to report.

3. Blood: Many authors state a secondary or hypochromic anemia is common. I cannot confirm this finding since anemia was present in only 22 per cent of the cases in my series. This may be due, however, to the fact that many of my patients suffered from this disorder to only a mild degree.

4. Carbohydrate Metabolism: The fasting blood sugar is almost uniformly low and the glucose tolerance curve tends to be flat. It has been stated that diabetes and hypothyroidism are very rarely coexistent.

5. Creatinine: The excretion of this substance is almost consistently diminished, and this may serve to be a valuable test when the differential diagnosis is difficult.

DIAGNOSIS

It should be emphasized that the greatest aids in making a diagnosis are a carefully taken history and accurate physical examination. These are more valuable than all the laboratory tests combined. The differential diagnosis is concerned with ruling out the following conditions:

1. Pernicious Anemia: In the more marked states of thyroid insufficiency the patients often have a chalky, pasty facial expression and are moderately anemic. An examiner occasionally thinks of pernicious anemia when seeing such a patient. However, a detailed history and careful blood studies make the differentiation easy.

2. Chronic Nephritis: As in the case of pernicious anemia, the appearance is occasionally mistaken for nephritis. A reasonably careful physical examination and history and kidney function tests will serve to differentiate this condition.

3. Dietary Deficiency: The differential diagnosis here may be a little more difficult since underweight, tachycardia and exhaustion are sometimes seen in both starvation and hypothyroidism. The basal metabolic rate is usually low in both conditions, sometimes markedly so. However, the degree of underweight is usually much greater in dietary deficiency, and a careful consideration of the signs and symptoms will usually make the diagnosis fairly easy.

4. Neurasthenia: The greatest difficulties in diagnosis are usually found in differentiating this condition and the hypothyroid state. Basal metabolism is not always a reliable guide since nervousness or apprehension of the patient at the time the test is made may raise a really low rate to normal or above normal levels. However, repeated basal metabolic tests will usually clarify this difficulty. In differentiating between these two conditions the blood cholesterol level and creatinine excretion should be of great importance unless complicating disorders are present to alter these findings. If after detailed studies and examination of the patient the diagnosis is still not clear, a therapeutic test is justified.

PROGNOSIS

Prognosis as to both life expectancy and symptomatic relief is excellent provided adequate treatment is carried out.

Extract of thyroid gland is specific in this disorder and when properly administered will often bring about the most gratifying results to be obtained in any disease for which we have specific treatment. Desiccated thyroid extract is the drug of choice. Care

should be taken, however, in choosing the brand of extract used as there is great variability in the potency of various extracts. The U.S.P. and the B.P. products are entirely different as regards potency and even different brands of U.S.P. substance will differ considerably in potency. Confusion to the detriment to the patient sometimes results if great care is not used in the selection of the product. It is impossible to foretell from the basal metabolism or other findings what the patient's optimum thyroid requirement will be. It is not an uncommon experience to find that myxedema patients with basal metabolic rates of below 35 per cent will require less thyroid extract to maintain them in good health than the milder states of thyroid insufficiency. It is best to start treatment with a small dose and gradually increase it at frequent intervals until the optimum dose is reached as determined by the patient's sense of well being, a rise in the basal metabolism to above minus 10 per cent and a fall in the blood cholesterol level to below 200 mgm. per cent. When this optimum dosage has been reached the maintenance dose can often be reduced from 50 to 75 per cent of this last dose. Thyroid therapy in most instances must be continued indefinitely as spontaneous remissions are rare. Thyroxin has been used with results equally as satisfactory as with thyroid extract, but it possesses no advantage and the cost to the patient is materially greater. The use of intravenous thyroxin has been advocated from time to time. Most authors feel that it has no advantage over oral therapy. In certain clinics it has recently been suggested that thyroxin be given intravenously if the patient for one reason or another becomes refractory to his oral medication. In my very limited experience with this form of treatment the results have been disappointing. The use of other endocrine products such as pituitary and ovary is to be discouraged in the treatment of thyroid deficiency unless these glands can be shown to be deficient. It is of interest to note in conclusion that during normal pregnancy the basal metabolic rate is increased to a level of plus 20 to plus 25 per cent. Some authors state that if the basal metabolic rate during pregnancy is not elevated to this degree that a state of thyroid insufficiency exists and that thyroid extract should be prescribed to bring the metabolism up to this level in order to prevent congenital goiter or even cretinism in the offspring.

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Pulsations In Retina

The belief that visible pulsations of the arteries of the perceiving portions of the eyes are always indicative of disease is erroneous, John E. L. Keyes, M.D., Cleveland, and William F. Hatcher, M.D., Youngstown, Ohio, maintain in *The Journal of the American Medical Association* for May 25.

Such pulsations are sometimes normal, and the authors suggest that textbooks on diseases of the eye should correct this fallacy.

"Skillful and careful observation," Drs. Keyes and Hatcher state, "will reveal a pulse in at least one branch of the retainal artery in as many as 80 per cent of cases suitable for inspecting the interior of the eye with the ophthalmoscope," an instrument devised for this purpose. Pulsations will not be seen in restless or uncooperative patients, or in patients with errors of refraction or hazy refractive eye mediums. Refraction is the passing of light through the liquid eye mediums which results in the focus of images on the retina or the seeing part of the eye.

DIAGNOSIS AND TREATMENT OF ATYPICAL LYMPHOBLASTOMA *

By HAROLD W. JACOX, M. D.
Pittsburgh, Pennsylvania

SINCE nearly every structure of the human body may become involved with lymphoblastoma, and because all branches of medicine and surgery are affected thereby, a discussion of its variable symptomatology should be of interest to all practitioners. As a radiologist I shall be chiefly concerned in this paper with the disease from the standpoint of diagnosis and treatment, and shall not discuss its many other features.

The diagnosis of lymphoblastoma is undoubtedly made more frequently now than it was formerly, but it is still often overlooked because of unusual complications which may simulate almost any disease. It is for this reason that biopsy is so important and because the information serves as a useful guide to adequate irradiation. It is imperative that the radiologist have a biopsy before entering upon a full course of röentgen therapy. At times a test of irradiation may be justifiable and helpful but usually more intelligent treatment can be given if biopsy is obtained.

Although the pathology of this condition is quite complex, in this country the disease is generally considered to be neoplastic, but in many respects may resemble a chronic infectious granuloma. Lymphoblastoma is a general term which includes lymphosarcoma, reticulum cell sarcoma, giant follicular lymphoma, Hodgkin's disease, the leukemias and mycosis fungoides, and there may be a transition from one type to another during the natural course of the disease. This interrelationship and the clinical mimicry are striking features of lymphoblastoma.

The incidence of this condition at The Western Pennsylvania Hospital was six per cent of over 1,400 cases of malignant disease studied. Although peripheral adenopathy, hepatic and splenic enlargement are customarily considered the characteristic onset of lymphoblastoma, a few of the more unusual manifestations were selected for presentation here.

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CASE REPORTS

Case 1: B. G., a boy of 11, suffered acute sudden pain in the right lower abdominal quadrant, anorexia and vomiting for three days before his family doctor examined him and thought he had acute appendicitis. Consequently he was brought to a surgeon who found a white blood count of 14,000 cells, a fever of 100 degrees, pulse 120 and respirations 30 per minute upon admission. In eliciting the past history it was learned that this boy intermittently had complained of intestinal gas, indigestion and occasional abdominal pain for the previous six months.

Examination revealed a tender mass in the right lower quadrant but no adenopathy or other abnormality.

An irreducible intussusception of the terminal ileum into the cecum was discovered at laparotomy, necessitating resection of the cecum and ascending colon and eight inches of ileum. A side-to-side ileocolic anastomosis was performed and the patient made an uneventful recovery.

Microscopic examination of the resected cecum showed: "Lymphosarcoma of large bowel." A röentgenogram of the chest was normal. The patient received röentgen therapy to the chest, and

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the front and back of the abdomen, amounting to 700 röentgens to each of eight abdominal portals and 400 to each of four others.

The patient remained well for only a brief period. Three weeks later he again developed signs of intestinal obstruction with recurrence of a mass in the right lower quadrant four times as large as before. A chest röentgenogram showed extensive bilateral pleural effusion with enlargement of the hilar lymph nodes. Further röentgen therapy to the abdominal mass reduced it enough in size so that operation was not necessary to relieve the intestinal obstruction, but the patient died two and one-half weeks after the second admission or three months from the onset of illness. The outstanding features here were the sudden onset simulating acute appendicitis, the rapid recurrence and poor response to therapy, and the rapidity of the course of the disease.

Case 2: W. J., a boy of 15, developed enlarged cervical glands; biopsy was done promptly with a diagnosis of "Hodgkin's disease" and radiation therapy was given with good response. He returned at regular intervals as requested and required only occasional treatments. Two and one-half years after his first visit he returned complaining of headaches, vomiting, diplopia, a fixed mass on the right parietal bone, and weakness of the left upper extremity with Jacksonian epileptic attacks. Röentgenograms of the skull showed an area of bone destruction two inches in diameter, involving both tables of the right parietal bone just posterior to the coronal suture, typical of a neoplastic lesion. If this boy had not been known to have Hodgkin's disease, a diagnosis of brain tumor would most probably have been made, but instead it was diagnosed as a metastatic lesion.

Three hundred röentgens to each of four portals about the skull caused disappearance of signs and symptoms, but the patient returned complaining of dyspnea, weakness, a mass in the left parasternal line and peripheral adenopathy. Death occurred one month after the last treatment and two years and seven months after the first. Autopsy showed: "Hodgkin's disease involving lungs, lymph nodes, intercostal muscles, meninges and skull." The unusual central nervous system involvement may have been the result of having his life prolonged by röentgen therapy so that he could develop bizarre complications.

Case 3: E. L., a 45-year-old woman was admitted to the hospital with signs and symptoms typical of quinsy. Vincent's organisms were obtained from throat culture and when the swelling did not subside satisfactorily, two biopsy specimens from the throat were taken at different times, but showed only purulent granulation tissue and no neoplasm. Anti-inflammatory exposures of röentgen rays were given over both sides of the neck with subsidence of clinical signs and symptoms.

Two months later the patient was readmitted because of an acute exacerbation of chronic gastrointestinal complaints consisting of epigastric pain, eructations and vomiting, diagnosed by her family physician as chronic cholecystitis. At operation the gall-bladder was adherent to the duodenum, but the entire stomach wall was found diffusely involved by a growth which contracted it to half its normal size. Thickening was especially noticeable over the pyloric third and the cardiac quarter of the stomach. Numerous glands were found adjacent to the greater curvature and in the gastrohepatic ligament one of which together with a small piece of stomach were removed for microscopic examination. The posterior wall of the stomach was involved to such an extent that only anterior gastroenterostomy could be performed. Exploration showed no other abdominal involvement.

The diagnosis of lymphoblastoma was not suspected until the pathologic report of "Lymphosarcoma of stomach and lymph nodes" was returned. Although there were no recent chest symptoms, an x-ray examination disclosed moderate enlargement of the hilar shadows with numerous nodules of increased density throughout both lung fields, interpreted as metastases. The patient's course was steadily downhill in spite of irradiation over the chest and abdomen and she died two months after operation. Whether the throat lesion was part of the lymphoblastomatous process we do not know, but suspect it was, because of the good immediate response to irradiation.

Case 4: J. P., a woman of 55, suffered acute abdominal distress of one week's duration. She experienced cramping pain across the lower abdomen, not relieved by ordinary measures, but vomited only once. The past history indicated vague epigastric discomfort relieved by food and soda for about a year.

Physical examination revealed an indefinite mass in the region of the umbilicus, without lymphadenopathy or other abnormalities. Blood counts, except for slight secondary anemia, were not abnormal.

Röentgen examination of the intestinal tract showed defects interpreted as neoplasm on both gastric curvatures in the middle third, extending toward the pylorus. There was a six hour gastric residue.

Laparotomy confirmed the röentgen findings and a biopsy specimen was taken from a gland in the gastrohepatic omentum which showed, "Lymphosarcoma, invading adipose tissue." High voltage röentgen therapy was given to the entire abdomen, each of eight portals receiving 1,050 röentgens in 15 days. Although subsequent röentgenograms showed considerable decrease in gastric involvement, and the abdominal symptoms were temporarily relieved, the course was gradually downhill. She lived one year from the onset of illness. The course of the disease was the same in this case as though it had been the usual type of carcinoma of the stomach which, before biopsy, it was thought to be.

Case 5: A. H., a man of 61, complained of "clogged ears" and of lumps in both sides of his throat for about four months. There were no other complaints, but he had been seen by an otolaryngologist at the onset of his present illness and diagnoses of chronic tonsillitis and otitis media were reported to have been made.

Both tonsils were huge, measuring three by three by two cm. on the left and four by three by two cm. on the right which was ulcerated. There was slight bilateral cervcial lymphadenopathy. Aural examination, a blood count and chest röentgenograms were not abnormal. On biopsy both tonsils showed "Typical lymphosarcoma", and 1,450 röentgens were given to each side of the neck in 12 days, using 100 to 150 röentgens to each side daily. While receiving treatments, the patient noticed an enlarged left testicle. This was three or four times as large as the right and was thought to be metastatic since it reduced one-half in size after a single exposure of röentgen rays as a therapeutic test.

Two months after treatment, the tonsils were subnormal in size and the cervical adenopathy and testicular enlargement disappeared. However, the patient now complained of dizziness and dyspnea. X-ray examination of the chset showed widening of the upper mediastinal shadow. The patient also complained of nasal obstruction. There was infiltration and bulging of the soft palate but no involvement of the tonsils or cervical glands. Biopsy of adenoid tissue from the nasopharynx showed, "Chronic inflammation but no neoplasm." Nevertheless, additional röentgen therapy was given to the nasopharynx, and also to the mediastinum and all other lymph gland bearing areas, but it did no good and the patient died four months from the time of his first treatment. The pertinent autopsy findings were, "Lymphosarcoma, involving nasopharynx, mediastinum, tracheobronchial and preaortic lymph nodes, right adrenal, spleen, kidneys and left testicle. There was stenosis of the tracheobronchial tree and compression of the mediastinal vessels by tumor." The bilateral tonsillar and testicular involvements were unusual features in this patient.

Case 6: D. S., a salesman of 46, had been in good health until three months prior to hospitalization when he developed a heavy sensation in the midabdomen, eructations, and weakness. After a gastrointestinal x-ray examination, his physician diagnosed duodenal ulcer and gave him a diet with alkalization. The patient felt worse after two and one-half weeks and returned to his usual diet for the next two months with only partial relief. A second röentgen intestinal series elsewhere reported a tumor mass lying behind and below the stomach and pressing upon the transverse portion of the duodenum and the stomach.

Laparotomy revealed a vascular, friable tumor three inches in diameter in the mesentery of the transverse colon, surrounding the great vessels so that excision was inadvisable. Lymphoblastoma was not considered likely until the report of the biopsy was "Hodgkin's disease."

Röentgenograms of the chest were not abnormal. When the incision healed, a hard, irregular mass was palpable beneath the scar in the epigastrium. Four hundred röentgens of high voltage röentgen rays to each of 14 portals covering all lymphatic areas of the body were given within three weeks. The mass gradually became impalpable.

The subsequent course of this patient has been excellent. There has never been adenopathy, other abdominal masses or enlargement of liver or spleen. He remains well at present, two years and four

months since the onset of the disease. The singular involvement with symptoms suggesting duodenal ulcer and the splendid response to treatment are interesting features of this case.

Case 7: M. B., a woman of 63, complained of alternating constipation and diarrhea, melena and weakness. She had been in good health until about a year before when she noticed blood in the stool for the first time. She also experienced pain in the sacrum and six months later began to have intermittent periods of diarrhea followed by constipation and accompanied by increasing weakness. These symptoms gradually grew worse and she consulted several physicians without obtaining relief.

The referring physician found multiple abdominal tumors which he thought were in the mesentery and surrounding the large bowel, and took a biopsy specimen from a ragged and bleeding area on the anterior rectal wall. The pathologic report was "Lymphosarcoma", but neither the röentgenograms of the chest nor the blood counts were abnormal.

Five to six hundred röentgens of high voltage röentgen rays to each of six fields over the front and back of the abdomen were given over a period of three weeks with only slight radiation sickness.

There has been a very satisfactory response over the seven months time during which the patient has been observed. She is now in normal health and there are no abdominal masses, enlargement of liver or spleen or peripheral adenopathy. The simulation of carcinoma of the rectum and the excellent recovery following irradiation are interesting features of the disease in this patient.

COMMENT

These cases emphasize the variety of symptoms which may be encountered and prove misleading, but nevertheless account for the variable clinical picture, and they also demonstrate the variability in response to treatment. Other examples could be cited to stress the importance of thinking of lymphoblastoma when the clinical findings are confusing.

When the diagnosis has been made the treatment is radiologic. Because the prognosis is fatal, the aim of the radiologist should be palliation of symptoms. I have found that irradiation of all lymphatic structures is productive of better results than irradiating only the manifestly involved areas. The earlier in the course of the disease the patient can be treated, the better will be the response and duration of regression. The treatment should be given in small daily exposures with a relatively low total amount to each area, but covering the torso with medium-sized portals.

CONCLUSIONS

1. Lymphoblastoma is a neoplastic disease of exceedingly variable manifestations, and should be considered more frequently in differential diagnosis.

2. Systemic röentgen therapy of all lymph node areas including the liver and spleen is the method of choice in the light of symptomatic response.

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Pemphigus Vulgaris

The first successful treatment with vitamin G of a patient suffering from pemphigus vulgaris, a skin disease characterized by blisters which after healing leave pigmented areas, is reported in *The Journal of the American Medical Association* for May 25 by Malachi C. Topping, M.D., and August F. Knoefel, M.D., Terra Haute, Ind.

There are two types of the disease: the acute, in which death occurs in a few weeks, and the chronic type, which has many subtypes. Some cases of the chronic types recover after months or years while in other cases there is a lapse of several years before death occurs. The victims of this disorder are generally of the lower strata of society in which dietary deficiency, especially in vitamins, is the rule.

The authors explain that they used the vitamin in their patient purely on an experimental basis and only because other vitamins have been reported to have effected cures.

"Our purpose," they say, "is not to advance or recommend its use but to report a single case in which it apparently effected a rapid and remarkable cure. The condition had been present for five and one-half months, was stationary and did not yield to various treatment measures. The material used is not available for distribution, but sufficient has been supplied to two clinics treating skin diseases for controlled investigation. A detailed report of their results will be published at an early date."

SELECTION OF ITEMS FOR A PUBLIC HEALTH PROGRAM*

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STUDENTS of the subject and intelligent laymen alike recognize that many factors contribute to human health. Some of these factors are intimately bound up with mode of life; others are basically economic; and finally, the level of health and well-being that prevails in a community may express the amount of organized effort that is being directed to this end. Any attempt at assignment of weights to the influences enumerated would be outside the purpose of this paper; rather the occasion calls for an expression of opinion on the appropriateness of items for inclusion in a public health program, and more specifically, on the scope of health department function. Perhaps the meaning as well as the implication of statements that follow would be clarified by mentioning at the outset that "public health program" and terms of similar connotation encompass the totality of organized effort for promotion, conservation, and restoration of human health.

The mere fact that the title of this paper is a rather hackneyed one suggests of itself that both the content of a public health program and the distribution of administrative responsibility are subjects about which differences of opinion may be expected. On the surface it might appear that there is less agreement today than obtained even a decade ago; the disagreement, however, is more apparent than real. Part of this difference signifies no more than quibbling over terms which have no trenchant meaning; as for example, the distinction between preventive and remedial measures. Jurisdictional disputes among the several branches of government having separate primary interests also serve to cloud issues of policy and responsibility. A more deep-seated cause for opposing views regarding the content of a public health program and its administrative pattern stems from conflicts among schools of political, economic, and social philosophies. On another front, popular desire for health has increased along with improvements in the techniques for lengthening life and increasing physical and mental efficiency. It should, therefore, be no surprise to find health gradually emerging as a political issue. This focus on health as a primary purpose of social organization also has served to bring into relief the wide distribution of responsibility for activities having some influence on human well-being. Since this paper is given for its suggestive value only, it may be in order to consider for a moment the evolution of health forces now in the fusing process.

As late as the beginning of this century, programs of public health were rudimentary in character; yet some attention was given to quarantine procedure, nuisance abatement, collection of refuse, care of the sick poor, and licensing of professional workers and of artisans whose occupation was thought to bear a relationship to human health. In some instances health agencies operated hospitals and custodial institutions. Following 1900 or thereabout a school of thought in health administration gained the ascendancy which was based

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on two fundamental tenets: First, disease prevention is an entity and to it health departments should give exclusive attention; second, health departments operate most effectively when limiting their activities to describing situations prejudicial to health and to outlining courses of action that others may follow. As a result of the application of these principles, orthodox programs of public health departments narrowed down to the point of having a very limited service content. The discarded functions, however, continued to expand under other auspices; for example, medical relief together with institutional facilities under welfare; factory inspection and the medical benefits of workmen's compensation under labor; refuse collection and building inspection under engineering departments, and food control under agriculture. Other items of less importance might be mentioned, but these will suffice to show how an essential service if abandoned by one agency is almost certain to be embraced by another. In this connection, mention should be made of the fact that health has often been subordinated when taken up by agencies having other primary interests. As may be expected the dispersion of health objectives among a number of agencies has inevitably led to dilution of effort and loss in the effectiveness of the measures that are being applied.

FEDERAL GRANTS-IN-AID

On the credit side of the ledger considerable recent gain may be observed with respect to organization. Largely through the stimulating influence of conditional grants-in-aid from the Federal Government, State and local health departments have been strengthened very materially. The question now uppermost in the minds of health authorities and public administrators is how this improved structure can be utilized in carrying the diversified responsibilities of government for individual and community health. Obviously one cannot be dogmatic about the appropriate distribution of administrative responsibilities when programs are in a formative stage. Furthermore, health departments of many areas have not had opportunity to develop traditions of accomplishment in fields where expansion might be appropriate. The discussion which follows must, therefore, be provocative rather than definitive; this applies to relative emphasis which should be placed on orthodox as contrasted with enriched programs, and to possible advantages which might accrue to the community and the public health movement by having the health department accept administrative responsibilities beyond its present limited sphere of action.

DEFINITION OF PROBLEM

Even the so-called "purists" in administrative practice concede that the health department should define the general health problems within its jurisdiction and suggest appropriate measures for remedying the defects found. For the discharge of these functions the health department is in a very strategic position. Certain information comes to it as a matter of administrative routine, and as the occasion arises special reports may be required. The body of data, routinely collected, includes birth and death certificates, communicable disease information, sanitary inspection reports, forms completed by field nurses, and records of health department clinics.

Certificates of births and deaths continue to be the bases for many calculations of human vitality; hence their collection may still be regarded as of primary concern to health departments. The newer demands on this function, however, must be recognized. Today measures designed for reducing infant mortality should become operative early. The filing of certificates thirty days or longer after delivery has relatively little value in a campaign to lower infant mortality because a very high proportion of deaths occur within a short time after children are born. Perhaps the most pressing reason for registration of death will soon be associated with settlements of Social Security claims. In order that overpayments on benefits may be avoided,

notification of death should be immediate. From the standpoint of the health officer there are more important reasons for registration of deaths than those of a fiscal character, but he cannot ignore the present demands on the registration machinery which originally was geared to a slower pace. In the interpretation of mortality data, a point especially to be remembered is that the crude death rate no longer may be trusted as an indicator of the healthfulness of a community, primarily on account of the shift in age composition of the population to the older brackets. As this shift occurs, inevitably rates will rise, especially for diseases associated with the aging process. Even specific mortality rates give only a limited picture of the illness burden since the causes of mortality are quite different from the causes of morbidity. Disabilities most commonly are ascribed to colds, toothache, digestive upsets, rheumatism, minor lacerations, and the like. These do not appear among the causes of death; yet to such relatively minor conditions may be attributed a high proportion of time lost by persons from their usual occupations. Understanding of the health problems of a community would be very much simplified if current illness could be portrayed through a comprehensive morbidity reporting system. The development of such a system on a broad base hardly seems practicable under the present scheme of medical service. Advantage, however, may be taken of certain sources through which limited information might be obtained. Among these sources should be mentioned records of hospitals and out-patient clinics, and of sick benefit associations and other groups where lost time is accounted for. Of late years the family canvass technique has been developed to a point where information sufficient for administrative decision may be obtained with relative ease and little expense.

MORTALITY AND MORBIDITY DATA

At best, mortality and morbidity data express tragedies which have occurred. Back of these accomplished facts are underlying causative influences which the health officer must detect and remedy. To a discerning health officer smallpox represents failure of his people to be vaccinated. Enteric disease for the most part arises out of an unsanitary environment. On theoretical grounds at least accidents should be preventable; thus their occurrence represents failure on the part of someone to exercise the necessary precautions. Some of these failures are expressed in faulty design of highways, buildings, or equipment, but more often the trouble may be ascribed to lack of safety habits on the part of citizens at large. Excess illness among any given class of workers or in certain establishments immediately should suggest the need for industrial hygiene.

INDIVIDUAL PARTICIPATION

In order that the individual may participate more actively in the movement for public health, it is necessary that he be informed on his physical status and his peculiar health needs. As a foundation for programs in personal health, there must be instituted a regular procedure for obtaining an accurate appraisal of the physical status of the individual together with an understanding of the circumstances under which he lives and works. The first measure developed with this end in view was medical inspection of school children; incidentally may be mentioned the fact that it still is an important activity of health departments. At a later date essentially this same technique was extended to children of lower age groups and to mothers during their maternity period. More recently efforts have been made to reach the general adult population through the movement for periodic physical examination. From an impersonal law enforcement agency the health department has become a group of physicians, nurses, sanitarians, and technicians having an interest in the health of each member of the community. It is well to recognize that the determination of the health needs of individuals introduces problems in human relationships quite different from those predominant when health departments pursued pro-

grams purely regulatory in character with respect to environmental sanitation and communicable disease control. The nature and implications of these relationships will be considered later in the section on health education.

CONTROL OF ENVIRONMENT

The individual may so order his premises as to be in accord with accepted rules of sanitation; his neighbor may do likewise, and so may his employer. Beyond these limited zones where conditions are susceptible to personal control many environmental hazards exist that can be handled only by public authority. Health, especially of the city dweller, is determined in large measure by the character of certain communal services. First in the order of importance is the quality of the water supply. Foods, especially milk, may be readily contaminated and hence become vectors of disease. It is difficult, and in fact often impossible, to safeguard the water and food supplies before proper provisions have been made for the disposal of human excreta. Until very recently there has been a tendency on the part of health authorities to minimize the public health features of garbage and refuse disposal. The high prevalence of trichinosis again serves to focus attention on city housekeeping as a health protective measure. Recurring outbreaks of typhus fever, tularemia, spotted fever, and rabies emphasize the importance of animals as reservoirs of disease transmissible to man. In malarious regions mosquito control may become a problem of paramount importance. The surroundings that obtain where a person is employed often exert a profound influence on his health; consequently correction of deleterious conditions in factories has formed the basis for industrial hygiene. From this beginning such programs are rapidly expanding to cover general health measures for the employed population. Accidents continue year after year to be among the more potent causes of death and disability. Not all of these occur in factories or on highways; injuries sustained in the home constitute a large part of the total. Although not commonly appreciated as such, farming is a dangerous occupation. The air one breathes easily ranks first among the essentials of life; notwithstanding, this part of man's environment has received perhaps least consideration by the sanitarians. The atmosphere may be polluted by noxious fumes, dust, or bacteria. Each of these contaminants is associated with one or more specific diseases; moreover polluted air has a general depressing influence on physiological processes. In a sense, communicable disease may be regarded as a hazard of the environment. As a result of this concept, quarantine stands first from the standpoint of chronology in public health procedures. At present, however, health departments place more emphasis on immunization, selected treatment services, and tracing sources of contagion, than on the mere confinement of infectious persons.

UNDEVELOPED FIELDS

In relation to several elements of environmental hygiene, health departments have already found their appropriate sphere of activity; other fields of perhaps equal importance from the standpoint of public health are not developed with appropriate vigor. Some of this aloofness may be ascribed to lack of authority or specific responsibility; more often the absence of health department activity represents only failure to recognize opportunities for effective service. It would not be possible to detail the appropriate rôle of health departments with respect to the many problems that fall in the broad field of environmental hygiene. Suffice it to say, however, environment is perhaps the greatest single influence in determining man's physical and mental well-being. Health departments need to study the various ways in which surroundings can be made more conducive to health, and they should assume gradually such rôles in a control program as may be adapted to the expanding concept of public health work. An enlarged and aggressive program of environmental control, however, may be expected to carry health agencies beyond their present position, which is often

detached, and into activities that call for the use of many techniques which may not be represented in the training of physicians, nurses, and sanitarians now employed. There can be nothing static about the program or the pattern of an agency that should carry primary administrative responsibility for this branch of public health.

LAW ENFORCEMENT

At one time the main function of a health officer was essentially that of sanitary police work. Health laws tended to be quite drastic and considerable discretionary power was vested in the administrative officer. Then, as now, courts were liberal in their interpretation of health laws, ordinances, and administrative regulations—usually taking the position that the convenience of the individual should be a secondary consideration as compared with the health interests of the citizenry at large. Despite the sweeping powers vested in health officials and the high respect accorded health laws by the courts, there has been a tendency of late years to subordinate law enforcement and to emphasize instead persuasive measures in attempts to shape human conduct. Within limits the change has been a wholesome one. As a result, science and reason supplanted frequent displays of authority in the relationships of the health official to the residents of the jurisdiction.

With respect to control of communicable diseases especially, the change in demands on the health officer from those of sanitary policeman to those of an educator has had a wholesome influence. This shift was largely responsible for the employment of trained epidemiologists and public health nurses, and the use of laboratory methods. In other respects many students of public health administration regret increasing failure on the part of health authorities to take advantage of the possibilities in law enforcement. Especially at this time, when the base of public health activity is expanding, latent opportunities for promoting health through law enforcement in the newer fields should not be overlooked. There follow a few suggestions in respect to the application of this technique; however, it must be understood that these by no means cover the field.

HOUSING MOVEMENT

One of the chief justifications for the housing movement is its alleged value to health. While it may be difficult to show a direct relationship between substandard housing and specific disease, there can be little question concerning the influence of good housing on general well-being. Much of the difficulty now encountered in slum clearance might be obviated if protection of the public health more often were made the basis of legal action. The whole safety movement developed outside the sphere of health department activity, despite the very obvious fact that accidents of various types constitute the principal cause of both morbidity and mortality. It is not difficult to understand the benefits that might accrue if health rather than the movement of vehicles were made the first consideration in traffic regulations. Countless articles of trade that are deleterious to health move in daily commerce. The attached hazard may be inherent in physical design or chemical composition of such articles or in the unfounded claims that are advanced to promote sales and use. Fraud or a similar reason is usually the basis of court action to suppress such practices; furthermore legal process as a rule is initiated by some agency of government other than the health department. Many conditions of the working environment are known to exert an adverse influence on human health. Responsibility for the correction of such conditions through legal means might well be embraced as a function of health departments. Labor departments, compensation commissions, and similar interests have taken the lead in law enforcement measures even where the condition to be corrected primarily affects human health. Only one additional use of law enforcement will be cited, and that is the prevention of stream pollution. Domestic sewage is the most common source of contamina-

tion although industrial wastes may be more troublesome in some places. Health departments too often operate on the principle that bodies of water may be used for the reception of sewage and other wastes up to the purification capacity of water treatment plants. This may be a wholly unsatisfactory critical point when all possible uses of a stream are considered. For example, marine life, recreation, and many industrial processes demand that bodies of water be maintained at or near their natural state of purity. It may be conceded that human health is not directly affected except where water is required for drinking purposes; health departments, however, occupy a most strategic position in the whole matter and should be in the forefront of the movement for preventing pollution, irrespective of the sources of such pollution or the uses made of the bodies of water.

HEALTH EDUCATION

Another field in which health departments may be expected to take a prominent part is education of the public on matters of health. Part of this educational work may be discharged in the form of a direct activity by the health department, while for other elements coordinated effort with the general educational system may be the most satisfactory method. To be effective, however, education must extend beyond the mere dissemination of technically correct information designed for general application; also consideration must be given to motivating factors that shape human conduct. Books, pamphlets, motion pictures, exhibits, talks, and similar devices have a place in a balanced program of health education, but their content of necessity lacks the specificity required for meeting the needs of persons confronted with specialized problems. By the employment of clinicians, nurses, inspectors, and other field workers, health departments have sought instruments for individualizing instruction. One type of adaptation is the suiting of advice to the understanding of the client; another is taking into account economic limitations of the individual which circumscribe applicability of such advice. Further individualization is often necessary in terms of a person's physical or mental characteristics. As stated previously, these qualities often can be determined only after careful examination supplemented in many instances by laboratory and other tests, all of which should be performed by professionally qualified people. In other words medical judgment is indicated on many occasions before advice of health department field workers can be truly appropriate. Health departments have not been oblivious to the need of medical diagnosis as a background for individualized instruction; this is evidenced by their efforts to establish clinics for determining the health status of children, prospective mothers, and persons known or suspected to be suffering from specific diseases. Unfortunately, the so-called health clinic is not a feature of all health departments. Even where highly developed, such clinics are visited by only a small proportion of the persons actually contacted by those field workers who have occasion to give health advice of one type or another.

PHYSICIAN'S ATTITUDE

Perhaps one reason for delay in the establishment by health departments of diagnostic and advisory clinics is lack of enthusiasm for them on the part of practicing physicians. Some regard this device as a means for supplanting the family physician; but in reality the health department is only sponsoring a service which seemed destined to remain underdeveloped without the participation of public authorities. This failure of hygiene services to develop unaided should not be construed as lack of interest on the part of private physicians; the obstacle lies rather in a scheme of practice whereby the cost entailed often deters the patient from obtaining an optional service. Practicing physicians as a rule do their most effective work among those persons who have occasion to call on them for professional service incident to illness. Another group on whom physicians may exact a much greater influence than health department workers is represented by

those individuals who have both the means and the understanding to employ a physician as regular consultant in health as well as in illness. Perhaps a reasonable and middle ground position to take is that health clinics and conference furnish essential background information for sound health education of the individualized type, especially among low income groups; furthermore this device is necessary as a leavening influence on the program as a whole.

OPERATION OF FACILITIES AND SERVICES

The place of health departments in the operation of facilities and services merits more extended discussion than is possible in a short paper that sweeps across the whole range of public health interest. Actually two fundamental questions are involved. First, over and above purely regulatory and fact-finding functions, what health facilities and services should be supported through taxation? Second, to which agency or agencies should be assigned administrative responsibility for the operation of governmental facilities and services designed primarily to serve human health? The first question is in reality a fundamental issue having political, social, and economic implications; the second is purely one of public management. Since this is a conference of professional workers employed in health departments, it is not the occasion for discussing topics of concern primarily to citizen groups and persons in the policy making positions. Professional health workers, of course, should be informed on these issues since improvement of health is likely to be a subject for public discussion for some time to come. As people understand more fully the benefits that accrue from modern medicine and sanitation they are likely to become increasingly articulate about the spread of those services over various groups of the population. Rather than become involved unnecessarily in discussions of unsettled social issues, health officers and their paid staffs had better address their attention and efforts toward increasing the usefulness of the health department in the performance of services after functions have been assumed by government.

SANITARY ENGINEERS NEEDED

In every health jurisdiction there are at the present time a number of facilities and services which are maintained through taxation and in the interest of human health. A well-developed rural county for example contains several urban communities ranging in size from perhaps 500 to 10,000 inhabitants. Most of these communities maintain water purification plants, and a lesser number have taken some steps toward treating their sewage. A survey of water and sewage treatment plants would show that many of them are operated by a person having little or no training for the job. A high proportion of plants too would be found turning out a quality of effluent below that contemplated by the designing engineer. No strain on the imagination is required to appreciate the amount of improvement that could be effected by placing immediate supervision over operation in the local health department where the service of a qualified sanitary engineer can be obtained. Of importance almost equal to the efficient operation of water treatment plants is performance of milk pasteurization equipment. The relationships involved may be somewhat different inasmuch as milk plants usually are private enterprises whereas water and sewage treatment works, especially of the small communities, are as a rule, publicly owned. There is, however, no essential difference between the two in respect to the need for technical supervision. While making this plea for active participation of health departments in the operation of water, sewage, and milk plants, it may not be out of place to emphasize the necessity of having on the staff of health departments persons of professional competence before such jobs are undertaken. In some States, too, health departments are handicapped by not having, in matters of sanitation, full jurisdiction over production, processing, and distribution of milk and other foods; under those circumstances basic changes in the law are necessary before health

departments can discharge their proper functions.

The public authorities of most counties appropriate some money for medical care of the indigent, and these funds perhaps are supplemented by varying sums contributed by the minor political subdivisions. While individual amounts may be small, the combined funds from the several sources usually attain significant proportions even for counties of relatively few inhabitants. The more populous counties and their municipalities are likely to support, through taxation, somewhat better developed institutions and public services than do political units which are limited from the standpoint of population and financial resources. Here one is apt to find general or special hospitals; one or more of such hospitals may also operate an out-patient department. Institutional care of the insane and the tuberculous has been a State responsibility for many years; as a matter of fact, both types of care are governmental monopolies in many places.

DEFECTIVE ADMINISTRATION

In the smaller places especially, public authorities have not been accustomed to employing persons of technical competence for the administration of facilities and services which are medical in character. To some extent the same deficiency regarding administration obtains among the populous cities and counties. In the past, the lack of professional direction of medical services might be condoned. Often the services were of such little moment that no particular direction was necessary. Perhaps a county physician was granted a pittance in consideration for his services to persons accepted as public charges. Another reason for this defect in administration was the absence of any single agency in government especially equipped for the purpose. Boards of health were little more than stand-by agencies to be called on in the event of epidemic disease. From the standpoint of organization, the situation is vastly improved over what it was even a few years ago. Local health departments under full-time medical direction render service to nearly 70 per cent of the population residing outside of urban centers, thus affording the same type of organized health protection which characterizes most of the large cities in this country. With few exceptions, professional ability of staff physicians is of a high order and many of them, through specialized training, are particularly equipped for administrative positions. The above general statements with respect to recent improvements in local health organization are equally if not more applicable to State health departments. As yet, however, State health departments have not been assigned any great measure of responsibility for the numerous institutions and the rather extensive medical services with which State governments have some type of operating relationship. At the State as well as at the local level the health department is the branch of government primarily concerned with human health. Gradually, and as their structure is perfected, it would seem logical and in the public interest to utilize these departments for the administration of those elements in medical care which are accepted as a public responsibility. The term "administration" is used to describe a system whereby the health officer is responsible for a scheme of medical service while not being called upon to render actual care to patients. In this way the recipients of service and the taxpaying public can be given assurance of disinterested and competent management. Also from an agency typified by a modern health department, professional groups concerned in the technical and economic aspects of medical service can obtain that kind of understanding which is essential to an enduring working relationship.

Five Senses as Safety Devices

The five human senses may be thought of as safety devices through which all of man's contacts with his environment are provided and through which he is warned of any impending danger, George A. Skinner, M.D., Berkeley, Calif, suggests in *Hygeia, The Health Magazine* for May.

GRANULOCYTOPENIA: CASE TREATED WITH ADENINE SULPHATE

By FRANK J. HOLROYD, M. D., F. A. C. P.
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THE use of adenine sulphate in the treatment of granulocytopenia followed the experimental work of Doan, Zerfas, Warren and Ames[1] and Reznikoff[2] who showed that the intravenous injection of nucleotides cause a marked increase in the polymorphonuclear cells in rabbits without affecting the other blood cells.

The first injection given to a human was by Reznikoff in 1929. Since this time the following reports have appeared in literature:

THE AUTHOR

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Date	Author	No. Cases	% Recovered	Type	Dosage	Comments
1929	Reznikoff[3]	4	75%	Malignant	.5 gm. b.i.d.	
1932	Reznikoff[4]	15	73%	Uncomplicated	1 gm. t.i.d.	
1931	McLester & Parsons[5]	2	100%		.5 gm. once a day	One case given .5 gm. daily for 6 weeks.
1938	Richmond[6]	1	100%	Followed Septic Opr.	2 gms. a day for 2 days	
1930	Hamburger[7]	1	100%		.5 gm. b.i.d.	

The author's case is reported because of the poor response to large doses of pentnucleotide and blood transfusion followed by good respnse to adenine sulphate.

CASE REPORT

B. W., a 60 year old white woman entered St. Luke's Hospital, April 27, 1939. Ten days previously, she had had severe pain in the right ear and pain and tenderness over the right mastoid region. An otologist found the right external auditory canal so swollen that examination of the canal and drum was impossible. Hot boric acid irrigations were started and she was given a tablet containing two and one-half grains of aminopyrine, five grains of aspirin, and one-half grain phenobarbital every four hours. She took nine doses, a total of twenty-two and one-half grains of aminopyrine. On April 20 she was given deep x-ray therapy to the area of the external ear and the next day on examination three boils were seen in the external auditory canal. The pus had eroded through the drum and was draining into the mastoid. External drainage relieved the tenderness and pain in the ear and over the mastoid region. On April 25 she was given another deep x-ray treatment to the canal and because of extreme weakness she was referred to the hospital for general medical examination. Past history was essentially negative except for a chronic hypertrophic arthritis of two years duration with resulting ankylosis of wrists and ankles.

Physical Examination: The patient was a fairly well nourished white woman, apparently acutely ill. Her wrists and ankles were ankylosed but not tender. The right ear was draining pus and the area over the right mastoid was tender. Her teeth were in very poor condition. The temperature was 102.2, pulse 124, respiration 26, and blood pressure 96/62. Urinalysis and Kahn were both negative. Physical examination was otherwise negative.

The following chart shows her course in the hospital and her treatment.

	Hb	Rbc	Wbc	Polys	Treatment
Apr 27	56%	3,540,000	1,100 Acutely ill.	14%	Pentnucleotide 20 cc. b.i.d.
28	55%	3,440,000	1,350	8%	Pentnucleotide 20 cc. b.i.d.
29	54%	3,940,000	2,050 Severe chill	2%	Pentnucleotide 20 cc. b.i.d.
30	55%	4,390,000	2,650	8%	Pentnucleotide 20 cc. b.i.d. 500 cc.Blood
May 1	60%	4,340,000	3,050	4%	Pentnucleotide 20 cc. b.i.d.
2	62%	3,970,000	2,700	0	Pentnucleotide 20 cc. b.i.d. 500 cc.Blood
3	64%	4,000,000	3,000	2%	Pentnucleotide 20 cc. b.i.d.
4	64%	4,530,000	3,400	4%	Pentnucleotide 20 cc. b.i.d.
5	80%	4,890,000	3,600 Slight improvement	6%	Pentnucleotide 20 cc. b.i.d. 500 cc.Blood
6	80%	4,900,000	3,950	10%	Pentnucleotide 20 cc. b.i.d.
7	80%	4,650,000	4,100	6%	Pentnucleotide 20 cc. b.i.d.
8	80%	4,650,000	4,250	10%	Pentnucleotide 20 cc. b.i.d.
9	84%	4,770,000	4,250	10	Pentnucleotide 20 cc. b.i.d.
10	82%	4,800,000	3,800	14%	Pentnucleotide 20 cc. b.i.d.
11	86%	5,000,000	4,050	12%	Pentnucleotide 20 cc. b.i.d.
12	67%	3,590,000	2,550	4%	Pentnucleotide 20 cc. b.i.d.
13	68%	4,000,000	2,300	6%	Pentnucleotide 20 cc. b.i.d.
14	65%	3,800,000	2,260 No general improvement	4%	Pentnucleotide 20 cc. b.i.d.
15	62%	2,900,000	2,000	6%	Pentnucleotide 20 cc. b.i.d.
16	60%	3,050,000	1,600	2%	Pentnucleotide 20 cc. b.i.d.
17	64%	3,100,000	1,800	3%	Pentnucleotide 20 cc. b.i.d.
18	56%	2,800,000	1,900	5%	Pentnucleotide 20 cc. b.i.d.
19	60%	2,400,000	2,050	7%	Pentnucleotide 20 cc. b.i.d.
20	64%	2,800,000	1,900	7%	Pentnucleotide 20 cc. b.i.d.
21	54%	3,000,000	1,850	8%	Pentnucleotide 20 cc. b.i.d.
22		3,050,000	2,000	7%	1 gm.adenine sulphate once a day.
23		2,900,000	2,400	10%	1 gm.adenine sulphate once a day.
24		2,950,000	2,400	11%	1 gm.adenine sulphate once a day.
May 25	62%	3,100,000	2,700	14%	1 gm.adenine sulphate once a day.
26		3,100,000	2,800 Patient's gen. condition much better,good appetite, etc.	16%	1 gm.adenine sulphate once a day.
27		3,200,000	2,700	16%	1 gm.adenine sulphate once a day.
28		3,000,000	2,800	19%	1 gm.adenine sulphate once a day.
29	64%	2,900,000	3,400	22%	1 gm.adenine sulphate once a day.
30		3,050,000	3,500	23%	1 gm.adenine sulphate once a day.
June 2		3,500,000	4,200	25%	1 gm.adenine sulphate once a day.
15	66%	3,250,000	4,100	23%	Reticulogen 1 cc. once a day.
July 1		3,100,000	4,200 Patient feels well.Able to do small amount of work.No complairts	26%	Reticulogen 1 cc. once a day.
10		3,400,000	4,000	26%	Reticulogen 1 cc. once a day.
14		3,400,000	4,100	28%	Reticulogen 1 cc. once a day.
18	70%	3,200,000	4,200	24%	Reticulogen 1 cc. once a day.
22		3,400,000	4,100	25%	Reticulogen 1 cc. once a day.
27		3,300,000	4,600 Patient feels well. Good appetite	31%	Reticulogen 1 cc. once a day.
Aug. 4		3,200,000	4,400	33%	Reticulogen 1 cc. once a day.
11		3,600,000	4,200	31%	Reticulogen 1 cc. once a day.
23	76%	3,800,000	4,600	34%	Liver & iron by mouth.
30		3,400,000	4,400	46%	Liver & iron by mouth.
Sept. 14		3,600,000	4,700	51%	Liver & iron by mouth.
28		3,900,000	4,800	48%	Liver & iron by mouth.
Oct. 12		3,700,000	5,400	52%	Liver & iron by mouth.
31		3,800,000	5,700	51%	Liver & iron by mouth.
Nov. 14		3,800,000	5,800	53%	Liver & iron by mouth.
Dec. 1		3,900,000	6,100	57%	Liver & iron by mouth.
Feb. 1939 28	84%	4,220,000	6,400 Feels well.	56%	

SUMMARY

A case of granulocytopenia is reported. The patient showed no response to continued large doses of pentnucleotide but recovered rapidly following intramuscular injection of one gm. of adenine sulphate once a day for 10 days.

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LIVER FUNCTION AND CARBOHYDRATE METABOLISM*

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THE study of the functions of the largest internal organ of the body, the liver, is a very interesting but voluminous task. These functions are various and the truth concerning them has been the result of many investigations by many investigators. This paper will be limited to a discussion of just one, namely, the relationship between the liver and carbohydrate metabolism.

The methods of investigating the functions of the liver, according to the classification of Carlson (1925),[1] include the following:

(1) Study of biliary secretion.

(2) Study of acute experiments, *i. e.*, experiments in which the animals are maintained under anesthesia throughout the period of observation.

(3) Perfusion of the liver.

(4) Chemical and histological analysis of hepatic tissue.

(5) Studies of disease conditions of the liver.

(6) The effect of hepatic poisons.

(7) The Eck fistula animal, *i. e.*, one in which the portal blood has been diverted from the liver by anastomosis of the portal vein and the vena cava with a ligation of the former proximal to the liver.

(8) Extirpation of the liver. This last method has been greatly improved by the work of Mann and his associates at the Mayo Foundation.

CARBOHYDRATE METABOLISM

One of the most important functions of the liver is the formation and storage of glycogen. This substance was first discovered by Claude Bernard in 1857, and remains as one of the several brilliant discoveries made by him.

Glycogen has the formula $(C_6H_{10}O_5)n$, which is also the general formula given to vegetable starch, consequently glycogen has frequently been spoken of as "animal starch." Glycogen can be detected in the liver cells microscopically. If the liver of a dog is removed twelve to fourteen hours after a hearty meal, hardened in alcohol and sectioned, the liver cells are found to contain clumps of clear material which gives a wine-red color reaction with iodine, which is a specific test for glycogen. By this simple method one can demonstrate the important fact that the amount of glycogen in the liver increases after meals and decreases during fasting hours, and if the fast is sufficiently prolonged it may disappear altogether.[2]

The amount of glycogen in the liver is quite variable, being influenced by such conditions as the character and amount of the food, muscular exercise, body temperature, drugs, etc. From determinations made upon various animals it may be said that the average amount lies between 1.5 and four per cent of the total liver weight. But this amount may be greatly increased by feeding upon a diet largely made up of carbohydrates. It is usually stated that glycogen exists as such in the liver cells, being deposited in the substance of the cytoplasm.

The function of glycogen as advanced by Claude Bernard is still generally accepted. According to Bernard, glycogen forms a temporary reserve supply of carbohydrate material that is laid up in the liver during digestion and is gradually made use of during the intervals between meals.

*Read before the Cabell County Medical Society as a part of the program of Internes' Night, March 14, 1940.

Glycogenolysis, the conversion of glycogen to glucose for utilization, occurs in the liver to meet the requirements of the tissues when no carbohydrates are being absorbed. The importance of the liver as a constant source of supply of blood sugar is shown by the fact that when this organ is extirpated, the blood sugar concentration diminishes rapidly and the animal dies. The conversion of liver glycogen to glucose is believed to be due to an enzyme, glycogenase, formed in the liver, which is opposed in its action by insulin.[3]

STUDIES OF MANN AND MAGATH

Mann and Magath (1922)[4] devised a successful procedure for extirpating the liver in mammals, and studied its effect upon the various chemical constituents of the blood. Among their studies they included the determination of the blood sugar concentration following this operation until death intervened. They found that after hepatectomy their animals all developed a constant symptom complex, characterized by, first, a drop in the blood sugar to a hypoglycemic level in two to eight hours; second, accompanying this drop in the blood sugar, there developed drowsiness, paralysis and coma; and when the blood sugar fell below 45 mgm. per 100 cc. of blood, their animals all developed clonic and tonic convulsions and died within five minutes. Because of the constancy of the decrease in the blood sugar in the dehepatized animal and the exact coincidence of the characteristic symptoms, these workers were led to investigate the effect of administration of glucose on animals in which the liver had been removed. They uncovered one of the most remarkable of physiologic phenomena: the animal, comatose and perfectly flaccid, apparently unable to contract any muscles except those of respiration, is restored immediately to a seemingly normal condition by the injection of from 0.25 to 0.50 grams of glucose per kilogram of body weight. Such apparently moribund animals will stand in 30 seconds after the injection of glucose; they will walk, respond to call, wag their tails, drink water, etc., in less than one minute from the time they had seemed dying! Restoration to normal is usually possible by the injection of glucose at any stage of the moribund hypoglycemic condition until the heart has actually stopped. Only five substances other than glucose were found to have a beneficial action when injected into the moribund animal. These were maltose, mannose, dextrin, galactose and glycogen.[5]

These workers also studied the effect of removal of the liver on geese, ducks, fishes, frogs, and turtles. In each species a decrease in blood sugar occurred and some of the symptoms of hypoglycemia could be recognized but the condition was never so characteristic and consistent as in the dog. The injection of glucose produced a transient beneficial action in geese and ducks but did not restore to normal the dehepatized animals of the other species.[6]

During the normal life of man there is constantly occurring either (1) a synthesis of glycogen from glucose derived from food ingested or from protein, and also from lactic acid liberated during muscular contraction, or, on the other hand, (2) an hydrolysis of glycogen (glycogenolysis) which is due to nerve impulses conveyed by glycogenolytic fibers to the liver or by the action of various hormones secreted by the endocrine glands.

USE OF GLUCOSE

Following hepatectomy there is a progressive lowering of the blood sugar and marked symptoms of hypoglycemia may occur, leading, if untreated, to coma and death. If glucose is given intravenously to such an animal in coma, it may be restored to consciousness and be enabled to walk within a few minutes. Muscle glycogen is not available as readily as liver glycogen for the formation of blood glucose. Hence animals whose livers are removed may die in hypoglycemic coma when considerable glycogen is still present in their muscles. Levulose solutions injected intravenously are valueless in combating hypoglycemia following hepatectomy, but maltose, mannose and glycogen are effective, though acting more slowly than

glucose. Excessive lowering of the blood sugar consequent upon the injection of an unduly large dose of insulin induces stimulation of the sympathetic nervous system. Glycogenolytic nerves so stimulated convey impulses to the liver, and glycogen is hydrolysed to glucose and the blood sugar percentage may be restored to normal; furthermore hypoglycemia causes an increased output of adrenalin, which also induces conversion of liver glycogen to glucose. This conversion is largely uncontrolled in diabetes mellitus owing to diminished action of insulin and unchecked activity of the diabetogenic hormone of the anterior pituitary. It seems that the liver is much more resistant to toxic disorders if there is an adequate storage of glycogen in its cells than when glycogen has been removed by starvation. Hence the present procedure in preparation of a patient for operation is to administer an abundance of carbohydrate. Carbohydrates are absorbed from the intestines as monosaccharides. Glucose is rapidly absorbed and it can be readily synthesized into glycogen. The usual method of administration is by mouth, but if the patient is vomiting, intravenously injected glucose may be used. Rectal administration is futile as abundant experimental evidence both in human subjects and in animals indicates that absorption of glucose does not occur in the rectum, or if absorption does occur, the amount is insignificant and of no clinical importance.[7] A five per cent glucose solution in water is isotonic with blood, but stronger solutions are frequently used. If much sodium chloride has been lost, glucose in isotonic saline may be administered intravenously.

Tsai and Yi (1936)[8] state that after the administration of glucose, or foods high in carbohydrates, the sugar content of the blood entering the liver is sufficiently higher than that in the outflowing blood to indicate glycogen formation from absorbed glucose. After the oral administration of glucose the portal venous blood contains up to 40 mgm. more of this substance than arterial blood, and up to 29 mgm. per 100 cc. were removed by the liver. Removal of glucose by the liver continued even when the blood sugar level ceased to rise, thus indicating that diffusion into the liver could not be responsible (Cherry and Crandall — 1937).[9] These workers also found that after oral glucose the amount of lactic acid removed by the liver decreased and in most instances this organ adds lactic acid to the blood. It is suggested that when glucose is available as a glycogen precursor, gluconeogenesis from other sources stops and the lactic acid produced by the liver as a result of its own metabolic processes is discharged into the blood stream. The administration of glucose by mouth has no apparent effect upon the addition of lactic acid or removal of glucose by the skeletal muscles or the intestinal tract.

Cori (1926)[10] showed that previously fasted rats, when fed with fructose, deposited more liver glycogen than those fed with glucose, and this in spite of the fact that fructose was absorbed at less than one-half the rate of glucose, and that the blood sugar was lower in the former animals than in the latter; two preponent factors determining the availability of sugar for hepatic glycogen synthesis. This work was confirmed by Fletcher and Waters (1937)[11], Cori (1931)[12] therefore, concluded that glycogen formation in the liver from fructose does not take place via glucose.

LIVER FUNCTIONS

The lactic acid produced during muscular contraction and other metabolic processes is converted to glycogen in the liver.[3] The absorption of lactic acid by the liver and its oxidation or reconversion to glycogen is a significant factor in maintaining a constant pH. If lactic acid is metabolized as food, three molecules of CO^2 and one free Na ion would be freed in the process; if converted to glycogen there results a liberation of free base with an increase of combined CO^2, a decrease in free CO^2 and a reduction of pH.[13] In this way the liver helps in overcoming acidosis. In severe liver damage, as in phosphorus poisoning, the liver loses its ability to convert

lactic acid into glycogen and there is an increased excretion of lactic acid in the urine.[3]

In diabetes the liver does not store the normal proportion of the absorbed sugar as glycogen, but allows it to pass through into the systemic circulation.[14] In the diabetic there is probably excessive and wasteful formation of carbohydrate in the liver from proteins and possibly also from fats. Very small amounts of insulin, having no effect on hepatic glycogen synthesis in rats absorbing glucose, is said by Fletcher and Waters (1937),[11] often to inhibit markedly this synthesis in animals absorbing fructose.

INSULIN DOSAGE

If insulin be given in large enough doses to produce convulsions and hypoglycemia in a normal animal, an injection of pituitrin causes a rapid rise of the blood sugar, and will stop the convulsions. The explanation suggested by Wright (1926)[14] is that pituitrin may convert the glycogen of the liver to glucose. He also suggests that the glycosuria and low sugar tolerance which occurs during the hyperpituitarism stage of acromegaly may be attributed to the oversecretion of pituitrin.

Removal of the pituitary[15] and the adrenals[16] from a depancreatized animal restores the diabetic animal to a more nearly normal condition as regards carbohydrate metabolism, *i. e.*, there is a marked reduction of the glycosuria together with its disappearance during fasting, a marked reduction of nitrogen excretion during fasting, and almost complete disappearance of acetonuria and acidosis. These results have been explained in various ways and probably the best theory is that the loss of the pituitary and the adrenals decreases the rate of gluconeogenesis from protein or fat in the liver.[17] This theory is as yet not proven, however.

Houssay (1936)[18] has been the leading investigator in this work on the pancreatectomized-hypophysectomized animals and such animals have been called "Houssay animals." He states that the hypophysectomy is equally efficient if it is performed before or after pancreatectomy. He has kept these animals alive as long as six to nine months. Wounds heal and there are fewer infections than in the pancreatectomized animal. Loss of weight occurs more slowly. Glycosuria diminishes and sometimes is not present, and fasting causes a more marked decrease. Polyuria is scarce or absent, depending upon the degree of glycosuria. The blood sugar in general is lower. Sometimes there is no hyperglycemia and it is even possible for hypoglycemic crises to occur, which improve upon the administration of sugar. Together with this there is an hypersensitivity to insulin. The ketones in the blood and urine decrease markedly, but the alkaline reserve falls slightly or not at all, although the calcium in the blood is lowered. There is a small increase in the catabolism of proteins. Hepatic and muscle glycogen may be found of normal values. If sugar is administered the animal can partially or even sometimes totally utilize it. This evidence proves that even without the internal secretion of the pancreas the organism can utilize sugar. In pancreatic diabetes it seems that the secretion of the anterior pituitary increases the production of glucose and diminishes its consumption so that the organism becomes overcharged with sugar. It has been possible to modify pancreatic diabetes through inhibition of the pituitary by the administration of folliculin. This has been used and found to prevent or improve the development of pancreatic diabetes in dogs, monkeys, and man.[18]

SOSKIN'S FINDINGS

Soskin, et al (1938),[19] found that carbohydrate utilization was greatly decreased in hypophysectomized animals as the muscle glycogen was found to be relatively stable and not as rapidly catabolized as in the normal or depancreatized animal. These results are important in explaining the hypoglycemic effects of fasting in both the hypophysectomized, and the depancreatized-hypophysectomized animal, and the amelioration of the diabetic syndrome in the latter animal.

Conn and Newburgh (1937)[20] suggest, from

studies on eight patients, that hyperglycemia and diabetic glucose tolerance curves simulating milder forms of true diabetes mellitus may be produced by disturbances within the liver which are associated with obesity. Since the term diabetes mellitus implies a diminished capacity for oxidizing glucose, such patients as those described do not belong under this heading even though they conform to the diagnostic criteria for diabetes as ordinarily interpreted. Their abnormal utilization of carbohydrate was corrected by simple reduction of the weight to normal. This was an attempt to show the reason for the difference between the young and the obese middle-aged person.

RESULT OF THYROID ADMINISTRATION

It has been shown that in animals given thyroid substance the glycogen in the liver is reduced and carbohydrate cannot be stored. This has also been shown to be the case in thyrotoxic patients.[21]

Hogg and Sidbury (1937)[22] present a case of von Gierke's disease and suggest that this disease is due to a faulty glycogen metabolism, in which the liver has the power to perform glycogenesis but not glycogenolysis. Therefore, there is a hypoglycemia, aglycogenolysis, acetonemia and an enlarged liver loaded with glycogen. Ubselm found that when amylase from another liver was added glycogenolysis occurred, so he thought that the fault lay in the amylase production by the liver.

Wright states that after strychnine poisoning with convulsions, in a fasting animal, the liver is glycogen free. However, if the animal is allowed to sleep, fresh glycogen is formed from some unknown source, as carbohydrate is apparently not available.[14]

In the presence of acute diffuse hepatic parenchymal injury there occurs a definite delay in the utilization of intravenously injected sodium–d–lactate. This delay is presumably due to the difficulty of conversion by the injured liver of the available d-lactate into glycogen.[23]

Williamson and Mann (1923)[24] claimed that injury to the liver by phosphorus or chloroform may cause profound functional and structural changes in the liver, but such intoxication does not particularly interfere with carbohydrate metabolism. Hyperglycemia, the result of increased glycogenolysis, may follow the administration of various chemical agents, such as adrenalin,[25] morphine, ether and other substances,[26] and by perfusion of the organ itself.[27]

No glycogen is deposited in the liver of the whole animal after injections of lactate in early diphtheria toxemia.[28] This was confirmed by Cross and Holmes (1937)[29] who also stated that the inhibition of carbohydrate formation by insulin in vitro is abolished by diphtheria toxin.

Finally, in the discussion of carbohydrate metabolism it may be well worth the space to mention that it is concerned in one of the protective safety rôles of the liver. It is known that the liver of starving animals is more susceptible to injury by poisons, such as chloroform, than is the liver of animals that have been fed abundantly on carbohydrate. The cause of this has been attributed by some to the influence of an abundant glycogen deposit.[21]

Hepatic lues has remarkably little effect in causing disturbances of liver function which can be detected by clinical or biochemical investigation. Jaundice very rarely occurs in the course of this disease, but it may result from the use of organic arsenical drugs in the intensive treatment of lues. Such jaundice is usually associated with a biphasic Van den Bergh reaction. A person whose liver has an adequate storage of glycogen is less prone to hepatic disturbance following the use of arsenical preparations than one whose liver is depleted of glycogen.[7]

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A NEW VISCERA RETRACTOR

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A NEW retractor to aid in the retention of viscera during abdominal wound closure is herewith presented. This instrument is simple in construction and there are no moving parts to get out of order. It permits the closure of the peritoneum to within one centimeter of the lower angle of the incision before its removal becomes necessary. The retractor can then be removed through this small opening with ease and dispatch.

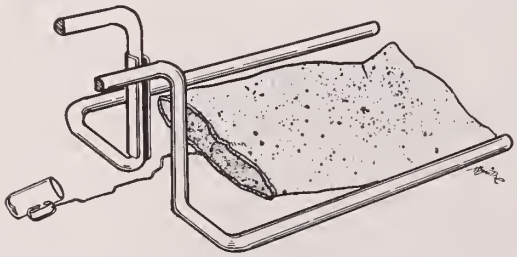

Figure 1: Diagram showing the parts of the viscera retractor in position for assembly.

The illustrations are perspective drawings of the instrument. It will be seen that it is essentially two small metal rods which are bent at right angles in a horizontal plane so that they form three sides of a rectangle when the retractor is assembled for use. At their junction the rods are bent upward and then backward to make a handle. On one side of the vertical portion of the handle there is a small flange to prevent forward and backward motion. When assembled the blades are held together by a metal cap which fits snugly over the ends of the rods composing the handle. A thin rubber cuff stretched over the blades of the instrument is attached to the metal cap by a strong silk thread.

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The retractor is inserted into the peritoneal cavity before closure is started. Its wide rubber surface effectively holds the omentum and coils of intestine out of the wound so that

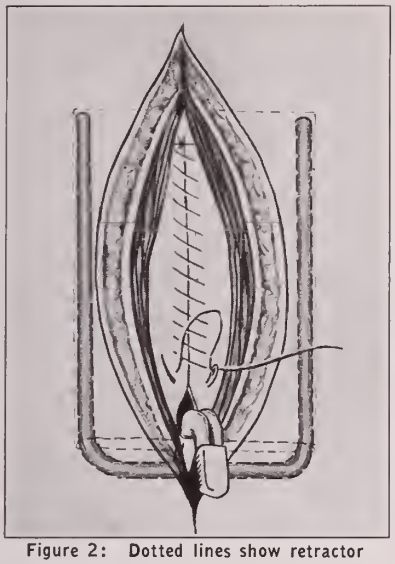

Figure 2: Dotted lines show retractor beneath the parietal peritoneum.

suture of the peritoneum is not hampered by protruding viscera. The peritoneum is closed to within one centimeter of the lower angle of the wound after which the retractor is re-

Figure 3: The right blade has been twisted outward as the first stage of its removal.

moved. In removing the instrument from the peritoneal cavity the parts are disconnected by simply removing the metal cap, after which each blade is removed separately. This is done by twisting the blade outward while making light traction. The rubber cuff is removed by pulling on the silk thread. The small opening in the peritoneum is closed by a single suture which may be placed before the retractor is removed if desired.

The instrument can be made in any desired size. It is possible to use a small retractor in closing a large wound by applying

Figure 4: This photograph shows the right blade almost completely out of the peritoneal cavity.

it to the upper portion of the incision and gradually moving it toward the lower end of the wound as the closure progresses.

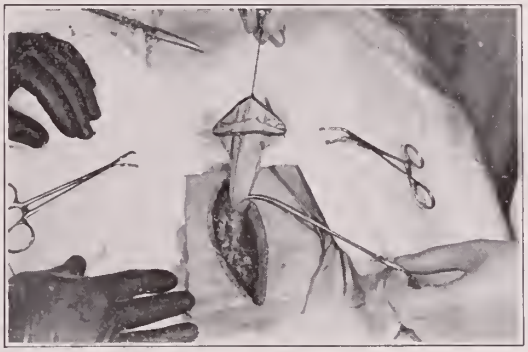

Figure 5: Photograph shows removal of the rubber cuff.

Smallpox Vaccine

The successful treatment with smallpox vaccine of fourteen patients troubled for years with recurrent fever blisters of the eye, nose, lips and face is reported by Perk Lee Davis, M.D., Philadelphia, in *The Journal of the American Medical Association* for May 25.

Dr. Davis points out that a relation between immunity to fever blisters and the virus diseases, smallpox and chickenpox, was suggested in 1927. "In man," he explains, "there are many infectious fevers caused by virus agents. Although recovery from many virus diseases gives an immunity which lasts for years, it is not constant. It is well known that the common cold, fever blisters and influenza do not protect the individual from subsequent attacks."

THE BLOOD SMEAR IN DIAGNOSIS*

By W. L. CLAIBORNE, M. D.
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THE blood smear in diagnosis is discussed in this paper to emphasize its value but with no intention of presenting a summary of all diseases and the pictures that each will show when the examiner peers at the Wright stained field under the microscope. There are few references used in writing this paper, and it is offered by an interne whose lengthy consultation of the literature would be theoretical, but does, however, result from the little experience and interest centered around the use of stained blood films.

It has been said that an intelligent study of a stained smear, together with the estimation of hemoglobin, will yield about 80 to 90 per cent of all the diagnostic information from a blood examination. It is the best means of studying the morphology of the blood elements, blood parasites, and, to the accomplished, the number of white and red blood cells. The platelets can be counted from this study and it has been suggested that twelve platelets per high power oil immersion field yield a normal count and with six the total platelets, by actual count, will be 100,000 or less. A hematologist stated that each disease, in his belief, presented a certain picture on the smear but proficiency in this field was acquired by volume of work and could not be efficiently and clearly explained to a student of hematology. It might be well to mention that he was confident that if he examined the blood smear of a suspected case of appendicitis, the removal of a normal appendix would not occur. This statement was criticized by associated clinicians but they were at times astonished at the accuracy of his diagnoses.

For accurate work, it is necessary to have a properly spread smear with the best stain obtainable, and it is common for a hematologist to name the technician who made the slide by its appearance and to be at a loss when depending on a smear made by another laboratory. The smear is made with a drop of blood obtained from the finger tip, the toe, or lobe of the ear as for a blood count. The thickness of the blood film depends upon the examination to be made. Thick smears are convenient in the differential count but a film too thick will obscure the identification of the white cells. For the study of cellular structure the film should be spread so that the red cells do not overlap. The spreading of the slide, then, is accomplished after considerable practice and is the finished product of the laboratory technician.

The first of the blood elements to be examined are the red blood cells which must be classified as macrocytes, microcytes, or normocytes, the latter being the normal cell size of approximately eight microns. Variations in sizes and shapes are designated as anisocytosis and poikilocytosis respectively. As to hemoglobin, it must be thought of as hyperchromic, hypochromic, or normochromic and judged in the comparison with the normal smear. After this classification the report of the appearance of the red cells will be, for example, hyperchromic macrocytic anemia of which pernicious anemia is the classical example. All other combinations of the six words will be used, depending on the appearance of the cells. When we look at the

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*Read before the Cabell County Medical Society, Huntington, West Virginia, March 14, 1940.

erythrocytes longer, they will be scrutinized for malarial parasites, Howell Jolly bodies, stippling, and for the appearance of immature cells, the normoblast and megaloblast. The latter are highly significant in judging whether the red cells are being thrown into the blood stream at a fast rate or whether they have been interrupted in their normal series of development by the lack of a certain factor such as the liver principle or intrinsic factor in pernicious anemia, which interrupts the series at the megaloblastic stage and brings out the macrocytic hyperchromic cells. Iron, another factor, will not affect the size of the cell appreciably but its lack will show itself as hypochromia in either normocytic or microcytic cells. The reticulocytes are normally about three per cent and increase in percentage when the blood producing organs are functioning normally and replenishing a blood loss or a deficiency due to disease which is responding to treatment. The absence of reticulocytes is evidence in favor of an aplastic type of anemia.

Under leukocytes the neutrophiles, basophiles, eosinophiles, lymphocytes, and monocytes are studied. The percentage is recorded first and then fields are searched for immature forms. The immature forms are the cells around which the Schilling and Arneth's counts are centered. These white cells are the complicated factors pointing to pathology in various portions of the human mechanism and a clear and concise summary cannot be written in such a short period of time, nor would that be possible without the assistance of a hematologist who has made an extensive study of the subject.

As far as the blood platelets are concerned, there is no value in diagnosis except to estimate the number. A thrombocytopenia is present in the purpuras and blood loss, but the count is normal in hemophilia. It is known that there is a change in the platelets in hemophilia responsible for the delayed clotting time but normal clot retraction. From the present state of study nothing can be predicted as to what will be revealed by further investigation of the thrombocytes.

Use of Sulfapyridine

A more conservative approach to the use of sulfapyridine, especially as to dosage, in the treatment of pneumonia and more discrimination in substituting it for sulfanilamide in treating other infections are advocated by W. Hurst Brown, D.M., M.R.C.P., William B. Thornton, M.D., and J. Stuart Wilson, Toronto, Ont., in *The Journal of the American Medical Association* for April 27.

In their study of the toxic or poisonous reactions of sulfanilamide and its derivative, sulfapyridine, the three men found that the latter is essentially more toxic than its parent drug and also that there is a narrow range between the blood concentrations of sulfapyridine which combat infection and those which carry an unwarranted risk of serious toxic reactions.

They point out that: "Clinicians have not yet reached agreement as to the blood concentrations of sulfapyridine that are adequate to control pneumonia of pneumococcic origin. Until matters of such fundamental importance are settled, expediency should be tempered by caution."

They believe that high concentrations of sulfapyridine in the blood should be avoided unless it is certain that lower concentrations are not controlling the infection. The highest concentrations, they say, should be reached at the very beginning of treatment and should be reduced after a short period of maintenance. Since elimination of sulfapyridine takes place through the urine, toxic reactions may often be avoided by giving enough fluids to insure an adequate volume of urine.

In an analysis of 100 cases treated by each drug, the authors point out: "Serious toxic manifestations were found twice as frequently in patients treated by sulfapyridine as compared with the series on sulfanilamide. Patients treated with intensive doses and in whom high blood concentrations of sulfapyridine were attained showed a very high incidence of serious reactions."

The authors emphasize that the vomiting often accompanying sulfapyridine treatment is not always a minor complication but may cause great discomfort. "It may be too much to say that the frequency with which the body is impelled to resist the retention of sulfapyridine should at once raise the question of its essentially toxic character, but the protest must at least be significant," they say.

MALIGNANT TUMOR OF THE KIDNEY

(Report of a Case)

By T. JUD McBEE, M. D. and C. C. FENTON, M. D.
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THE incidence of malignant tumors of the kidney is about one per cent in adults and 0.1 per cent in children. Of tumors in general they constitute two per cent in adults and 20 per cent in children.

The classification of the different types of renal tumors has been, and still is, the subject of much difference of opinion.

For clinical purposes, classification may be made under four general groups of parenchymal neoplasms: Hinman.

1. Epithelial tumors.
   a. Adenoma.
   b. Carcinoma.
      Adenocarcinoma (hypernephroid tumors of Lubarsch).
      Alveolar carcinoma.
      Cystadenoma malignum.
2. Tumors of Connective Tissue.
   Benign.
   Malignant.
   (Sarcoma).
3. Embryonal Tumors.
   Benign.
   Malignant.
4. Tumors Arising from Adrenal Rests.
   Hypernephroma.

From Hinman on Urology, we get the following statement as to classification:

New Growths of the Renal Parenchyma: The clinical differentiation of the different pathological types of parenchymal neoplasms is impossible. The mere diagnosis of tumor, if at all early, is noteworthy. Almost all tumors are unilateral and malignant. With the opposite kidney known to be present and healthy, nephrectomy is the treatment for all growths and clinical differentiation would have little value. The pathological differences, however, account for the considerable difference in the degree of malignancy, and an understanding of the gross, microscopic and metastatic characteristics of the great variety of renal tumors is as necessary to the surgeon as to the pathologist.

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Dr. Fenton, graduate Cornell University Medical School; Fellow American College Physicians; Member American Board of Pathology and Professor of Pathology, School of Medicine, West Virginia University.

Many cases of so-called hypernephroma should be classified as cases of carcinoma. True carcinoma has a greater malignancy then hypernephroma. Whether or not hypernephroma arises from adrenal rests and carcinoma from renal epithelium, does not influence the treatment.

The adenocarcinoma is a tubular form of overgrowth and may be papillary or solid. It is the most common variety of renal cancer, the variety popularly known as the "Grawitz tumor" or "hypernephroma"—a more or less solid tumor composed of large, clear, "swollen" cells with shrunken dense nuclei, closely related to blood vessels. Cystic, papillary and tubular varieties of such malignant tumors create considerable confusion.

Eisendrath and Rolnick state that all hypernephromas are carcinomas because they have their origin in the renal tubules, as claimed by Sudeck, Stoerk and Oberzimmer. All hypernephromas are the result of malignant changes in aberrant adrenal rests, such as occur in similar adrenal inclusion tumors of the spleen, liver, pancreas, ovary, etc. This

is the contention of those who support the theory of Grawitz.

Embryonal Adenosarcoma, Also Termed Wilms Tumor: Almost all of the solid tumors of the kidney in children are of this variety. The average age at which they are recognized is three years. From the seventh year there is a steady decrease in incidence until puberty and thereafter Wilms tumor is extremely rare, according to Campbell (Pediatric Urology).

As our clinical experience increases, it becomes more evident that no group of symptoms is characteristic of renal neoplasms, whether they arise from the parenchyma or pelvis. Let us take for example the three common symptoms, viz., hematuria, pain and tumor. These are all present in so many other renal lesions, that it is only by a thorough urologic study that a diagnosis can be made of renal neoplasm. Any one or all of them may be present or any one or all of them may be absent. Frequently the tumor is the only one present as in the case we are reporting.

SYMPTOMS

Hematuria is seen as an initial symptom in 60 per cent of all cases and as an associated finding in 20 per cent more, making a total of 80 per cent. It is most often painless, has a tendency to cease spontaneously and recur at irregular intervals. As a rule the degree of hematuria is greater in the case of a neoplasm than any other form of renal lesion causing hematuria.

The importance of each symptom should be considered initially as it appears and the diagnosis not allowed to wait until the clinical picture is complete.

Very little has been written concerning fever as a symptom in malignant tumor of the kidney. Scholl cites a case. Creevy reported two cases in which fever was an outstanding symptom. Judd of the Mayo Clinic states that chills, fever and night sweats were present in ten per cent of cases. Israel believes the pyrexia is due to the formation in the tumor of specific pyrogenic substances. When these symptoms are present the prognosis is bad.

This may stand out as the principal complaint of the patient in a few cases, but it is of subordinate value in diagnosis as compared to either hematuria or tumor. It may be more constant when adjacent nerves or structures in relation to the kidney are involved. It may also be due to metastasis. The pain, however, as far as I have seen, in my cases, and in the literature, does not differ from that found in most other kidney lesions. Thompson-Walker says: "Constant aching pain, unaffected by movement or by the variations in the hematuria, and only temporarily relieved by drugs, is the characteristic pain of renal tumor.

TUMOR

Tumor formation occurs next following hematuria and pain. Tumor can be palpated in about one-third of the cases. By careful and systematic palpation as in other examination of the kidney we can often palpate a renal neoplasm. By abdominal inspection alone it is unusual to see an enlargement except in children. This abdominal enlargement in children is most often the first symptom that brings the child to the physician. The palpation should include the kidney on the opposite side and be done in both supine and upright position. In some cases a metastasis in some other part of the body has drawn our attention to the kidney. In children the onset is insidious and the tumor is often the initial symptom.

The chief things to bear in mind when palpating for kidney tumor are as follows:

1. Location in the respective upper quadrant of the abdomen.

2. Ability to palpate the enlargement bimanually.

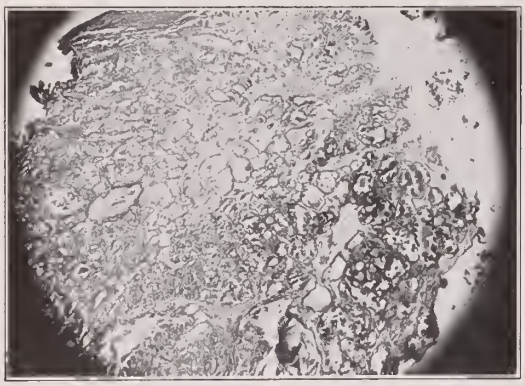
3. More lateral position than is true of most tumors of intraperitoneal origin and ability to secure ballottement (unless tumor is fixed).

4. The disappearance of the tumor behind the costal arch.

DIAGNOSIS-URETEROPYELOGRAPHY

The flat x-ray plate may often be suggestive of malignant disease of the kidney. There may be a large shadow seemingly out of proportion to its fellow.

Pyelography affords us a definite knowledge that there is something radically wrong in the kidney, but like the flat x-ray does not make the diagnosis alone. There is no such



Microscopical slide of the pathological section.

thing as a typical picture although such claims are made. Renal neoplasms are often bizarre and this means the pyelograms will vary. There are certain changes produced which are not diagnostic but are considered as suggestive. They are:

1. Elongation of the calices.
2. Filling defects of calices and pelvis.
3. Enlargement of pelvis.
4. Displacement of kidney.
5. Crescent shape of pelvis and calices.

It would appear to be a good clinical rule to consider all renal tumors malignant until they are proven otherwise. As a matter of fact malignant tumors occur much more frequently than benign tumors, so that when a diagnosis of malignancy is made one has only a very small chance of being in error. It is repeatedly stated that tumors of the kidney occur more frequently in male than in female. Kretschmer cites 54 cases which occurred in 40 males. The most important consideration is that of an early diagnosis. This is also important in governing the treatment and prognosis. With modern urologic diagnosis many of the symptoms and signs considered important by the older clinicians cannot be given their former value since they occur late, when the prognosis is bad. Therefore it is not safe to wait for the old triad-hematuria, pain and tumor. The urological examinations and pyelograms must be made early.

DIAGNOSIS

"In several cases of hypernephroma we have noted dense fimbriated streaks of calcification, unlike those observed in any other condition and this sign may prove of diagnostic value." (Braasch)

It is our experience that in cases presenting these symptoms the diagnosis is not an early one and the case usually terminates fatally.

Thirty-five cc. 20 per cent skiodan injected right kidney. Note the marked filling defect. About three-fourths of the kidney involved.

To add to the difficulty it has been found that the preoperative duration may be no index to the prognosis. Cases may terminate fatally and never at any time show any sign or symptom. (H)

Hypernephromata and embryonic mixed tumors are the two most frequently found. The former occur most frequently during late adult life, and the latter during early childhood.

The most important consideration in making a diagnosis is that the examination be sufficiently complete. Only after this is an exploration of the kidney justified.

When the diagnosis of renal tumor is made there are only two possible factors that may justify delay in exploring the kidney. First, the question of employing irradiation to reduce the size of tumor and destroy some of the blood vessels. This should be routine in Wilms tumors. By this preoperative irradiation inoperable tumors can in some instances be made operable.

The second factor that may justify delay is metastasis. It may be said nephrectomy is seldom justified in the presence of metastasis. This should not be absolute, as there is always the possibility of mistaken diagnosis, and a mistake as to whether or not there is a metastasis, and if there is, whether is may be cleared up by irradiation. This is particularly true of metastasis to the lungs which cannot always be detected with certainty. By refusing nephrectomy to all patients showing metastasis one may deprive a patient of the only possible method of cure.

From a review of the literature, I conclude that irradiation by means of x-ray or radium is of questionable value but should be tried.

I may repeat that when a diagnosis is made —operate.

CASE REPORT

Mrs. E. A., widow, age 59.

Chief Complaint: Pyuria, fever and discomfort in upper abdomen for three weeks.

Family History: Negative.

Past History: No history of urinary disturbance other than a short attack of cystitis one year ago which was untreated.

Physical Examination: Well nourished, white female, age 59. Appears younger. Abdomen is soft. Some tenderness in right upper quadrant. A tumor mass can be felt in this region below costal margin. Irregular in shape and movable on bimanual examination ballottement is made out. Left kidney not palpable. Patient has been ill for three weeks with frequency, pyuria and with fever. Mental condition is clear. She definitely states she has had no hematuria, and gives no history of pain recently or over a period of years.

Cystoscopy and Pyelograms: Bladder negative. No. six catheters passed easily. Urinary flow normal. Indigo carmine appeared from left side strongly in six minutes. Slightly from right side in 13 minutes. X-ray showed large right kidney and shadows that looked like discs over a large area in the kidney shadow. Left kidney shadow normal in shape and location. Skiodan was injected on the right side to the amount of 35 c.c. The right kidney pelvis was opposite the third lumbar vertebra. There was a marked filling defect of the pyelogram in a vertical manner about four inches long and one-half inch in width. It appeared that three-fourths of the kidney was involved in this abnormal shadow. Middle calices obliterated. Right ureter tortuous and dilated. Less than one-half of the skiodan drained out in 22 minutes. Left pyelogram negative.

Impression: These findings could be interpreted as calcification of tuberculosis, degenerated cyst, or neoplasm.

Laboratory Examination: WBC, 19,000; RBC, 3,100,000; H. B., 58 per cent; sugar, negative. Urine from right kidney loaded with pus cells. Urine with left kidney, negative. N. P. N., 34.8 mgs.; creatinine, three mgs.

Operation: Anesthesia, cyclopropane. Large right lumbar incision made and kidney exposed. It was found to be large, nodular and encapsulated, and was freed rather easily. There was not much bleeding and no anomalous vessels were found. The kidney was large and was brought through this large opening with difficulty. There appeared to be no involvement of the renal vein or other evidence of metastasis. Slight hemorrhage was encountered. Transfusion with 500 c.c. of whole blood was given. The patient was discharged in fourteen days, and then had a course of deep x-ray therapy. Since then she has been doing her regular house work, and appears in excellent condition 12 months following operation.

PATHOLOGICAL REPORT

Gross Description: The organ is greatly enlarged and its consistence is soft. There are large cyst-like areas which bulge from the surface and cause a marked distortion of contour. The capsule is thin. Its color ranges from gray to yellow to deep bluish red. The organ measures 16x11x8.5 cm. The two poles are distinct but the remainder

of the organ presents bulging nodular areas with softened yellowish tissue protruding through the capsule. It weighs 694 grams. On sectioning, it cuts with lessened resistance. The nodules which externally appeared cystic and soft, fleshy and necrotic. They are yellow and red in color and traversed with fibrous-like trabeculæ. The cortex for the most part has been reduced to a shell and in its thickest portion measures nine mm.

Microscopic Description: There is a proliferation of connective tissue of the capsule. Diffuse infiltrations of lymphocytes are noted within it. The glomeruli are distorted in shape. Some show a proliferation of capsular epithelium while other glomeruli are converted into masses of connective tissue which exhibits a hyaline change. The tubules are small and are filled with an albuminous-like material. In areas there is a marked swelling of the tubular epithelium. The interstitial connective tissue is increased and is infiltrated with lymphocytes. Nodular areas are observed which are surrounded by dense connective tissue.

Within these areas atypical cells are seen. They have a branched-like arrangement. The nuclei are small and deeply staining while the cytoplasm is clear and vesicular. The connective tissue stroma between the cells is scanty. Areas of necrosis and hemorrhage are also noted. Occasional small cyst-like areas are seen as well as scattered blood pigment.

Diagnosis: Malignant nephroma (hypernephroma).

Delayed Menstruation

Acting on the possibility that delayed menstruation, when not due to pregnancy, might be due to abnormally decreased vascular (blood vessel) responsiveness and not to temporary dysfunctions of internal secretions to which it now is generally ascribed, Samuel Soskin, M.D., Hans Wachtel, M. D., and Oscar Hechter, B.S., Chicago, successfully restored menstrual flow in such cases by treatment with the drug, prostigmine methylsulfate, they report in *The Journal of the American Medical Association* for May 25.

Every one of twenty-five non-pregnant cases of menstrual delay effectively responded to the drug, they say. Preliminary work conclusively demonstrated that prostigmine methylsulfate does not initiate menstrual flow when delay is due to pregnancy.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

For the past few years vast numbers of school children and college students have been tested with tuberculin and the x-ray. Out of these studies have come some definite conclusions pertaining to the incidence of tuberculosis in youth. Little has been reported, however, about the outcome of cases discovered in mass testing programs, doubtless because sufficient time has not elapsed in most of these studies to justify an appraisal of the results of treatment. In Massachusetts, where pioneer work in mass case-finding was begun more than a decade ago, Chadwick and Evarts have attempted to evaluate the results of various types of treatment and the fate of tuberculous adolescents. A summary of their findings follows.

Tuberculosis in Adolescents

The case fatality rate of pulmonary tuberculosis cannot be determined unless we follow a large number of cases from the time diagnoses are made until the death of all the individuals concerned. Unlike acute communicable diseases, tuberculosis is a disease of long duration. It may be acute, but is more often chronic, with periods of quiescence followed by exacerbations and may so continue for years.

We may, however, measure the effect of treatment by checking against each other, groups of similar age who have been treated by different methods for the same length of time. The authors studied the records of 245 cases who had parenchymatous pulmonary tuberculosis at the time they came under observation. Most of them received treatment in some sanatorium. These were divided into three groups according to the time they had been under observation, namely, Group A, from five to 10 years; Group B, from three to five years; Group C, less than three years.

The type of treatment received by these groups, further divided according to stage of disease, was found to vary during the past 10 years. There was a trend away from routine bed-rest treatment for a preliminary try-out period to be later supplemented by pneumothorax if the disease were not controlled. The present practice is to institute pneumothorax promptly. The minimal cases of Group A admitted to Middlesex County Sanatorium (prior to 1934) received no immediate treatment with pneumothorax; 40 per cent of Group B were given pneu-

mothorax promptly; of Group C, 87 per cent were given pneumothorax soon after admission.

The conclusion of the authors, based on their own studies and supported by those of others, are that the mortality from tuberculosis in adolescents is high and treatment very discouraging. Morgan, reporting in 1938 on 320 cases of boys and girls 10 to 18 years of age treated in the sanatorium prior to 1933, found that 62 per cent were dead, 14 per cent under treatment, 17 per cent well, and seven per cent not located. The treatment in this series consisted of prolonged bed-rest supplemented by pneumothorax in a few cases, and then given only after a period of waiting. Zacks recently studied 186 cases treated in sanatoria and observed for a period of about four years. Those that had routine sanatorium treatment only, showed a mortality of 30.9 per cent for boys and 34.4 per cent for girls; those that had sanatorium treatment plus pneumothorax, showed a mortality of 8.5 per cent for the boys and 23.1 per cent for the girls. In the authors' group observed for five to ten years, the deaths were 4.8 per cent for the boys and 27.5 per cent for the girls. Half of these cases were given pneumothorax.

Pneumothorax should be instituted as soon as possible after diagnosis is made even in the minimal cases and this should be supplemented by pneumonolysis if satisfactory collapse is prevented by adhesions that can be cut. Ineffective pneumothorax should be abandoned and some other surgical collapse procedure carried out. When a satisfactory collapse with pneumothorax is obtained, it should be continued for a minimum of three years and for five years in the cavity cases.

Patients discharged from the sanatoria should be considered as having completed only the first phase of treatment and should return at frequent intervals for consultation during subsequent years. If they are pneumothorax cases, they will have their refills and in any event their condition will be rechecked. A röentgenogram taken every three months will be the most important means of following the course of the disease. If the old lesion shows reactivation, or a new one appears, prompt readmission and suitable treatment should be instituted at once.

The evidence available in this and other studies indicates the ineffectiveness of bed-rest treatment alone in staying the progress of tuberculosis in adolescents.

Treatment of Pulmonary Tuberculosis in Adolescents, Henry D. Chadwick, M.D. and Helen W. Evarts, Amer. Rev. of Tuber., Vol. XLI, No. 3, March, 1940.

The Age of Greatest Risk

The peak of the tuberculosis death rate seems to have shifted toward older age groups. For example, tuberculosis mortality rates for Massachusetts show that the "peak" occurs in the decade 20 to 30 for the year 1880, in the decade 30 to 40 in 1910 and in the decade 50 to 60 in 1930.

Looking at the 1930 curve, the impression given is that nowadays an individual encounters his greatest risk of death from tuberculosis between the ages of 50 and 60. But this is not really so; the people making up the 1930 age group 50 to 60 have, in earlier life, passed through greater mortality risks.

This is demonstrated by plotting mortality rates at successive ages in cohorts, that is, groups of people born in a particular decade. Graphs so made indicate that the group of people who were born in the decade 1871 to 1880 and who, in 1930, were 50 to 60 years old, (if alive) have in two earlier periods, passed through greater risks, one shortly after birth, the other in the period 20 to 30 years. No matter which group of cohorts are studied (decades 1870 to 1910) the peak of the mortality curve falls in the 20 to 30 decade.

Without attempting to interpret the facts in detail, Frost notes certain implications, as follows:

1. Constancy of age selection (relative mortality at successive ages) in successive cohorts suggests rather constant physiological changes in resistance (with age) as the controlling factor.

2. If, as we may suppose, the frequency and extent of exposure to infection in early life have decreased progressively decade by decade, there is no indication that this has had the effect of exaggerating the risk of death in adult life due to lack of opportunity to acquire specific immunity in childhood.

3. Present day "peak" of mortality in late life does not represent postponement of maximum risk to a later period, but rather would seem to indicate that the present high rates in old age are the residuals of higher rates in earlier life.

The Age Selection of Mortality From Tuberculosis in Successive Decades, Wade Hampton Frost, M.D., Milbank Mem. Fund Quarterly, Vol. XVIII, No. 1, January, 1940.

President's Page

The West Virginia primary election is over. The general election will be held next November. During the coming summer months, county medical society representatives will have a golden opportunity to confer with their local legislative candidates on the problems of organized medicine in this state. This is a matter of vital importance to all of us, and a comprehensive prelegislative program must be carried out. It will be done.

The machinery for carrying out this program will be set up at the White Sulphur Springs meeting in July. The program itself will be directed by our Association's legislative committee. Each county medical society will be instructed to either elect or appoint its own legislative committee to carry out pre-election conferences. These committees will receive advice and guidance from the state committee, and follow-up work will be carried out wherever necessary.

The importance of this proposed program is apparent, and its success in each county will depend largely upon the county medical society and its legislative committee. This does not mean that the West Virginia State Medical Association is going actively into politics, but it does mean that we *will* get in politics if necessary. We do not expect to ask legislative candidates to pledge blind allegiance to the medical profession, but we do expect to step out and actively oppose candidates who indicate they are opposed to our present American system of medical practice. There has been much talk for many years that the doctors could wield a great deal of political influence if they would take an active interest in political candidates. This year we expect to find out if this is true.

This is one of the important considerations that will confront all of us at the White Sulphur Springs meeting. Let us all be thinking on this problem so that it may be decided promptly and correctly at the first meeting of our own House of Delegates on July 29. Careful advance study of Association problems will aid greatly in their proper disposition.

Our joint meeting with our Virginia confreres at White Sulphur Springs promises to be the largest gathering of medical men ever assembled in West Virginia. With an outstanding scientific program, with an unusually fine layout of scientific exhibits from both states, with attractive sporting and entertainment features, this medical reunion of the Old and New Dominions will be a history-making event. Let us all be on hand to help write this history.

Frank V. Langfitt
President.

West Virginia Medical Journal

P. O. Box 787
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CHARLESTON, WEST VIRGINIA

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CONVENTION PREVIEW

Plans for our joint meeting with the Medical Society of Virginia at White Sulphur Springs on July 29-31, 1940, are now complete. The work of the various convention committees has been finished and full information regarding every phase of the meeting will be published in the July JOURNAL, which will be the annual convention number. At this time, however, we can give our readers a fairly good preview of what to expect.

Preconvention activities will open on Sunday when the golfers of the two state societies tee off to decide the championship of the two Virginias. There is a chance that Governor Price of Virginia and Governor Holt of West Virginia will participate for their respective states. On the basis of the scores turned in Sunday, the individual state championships will be awarded. Members desiring to enter the tournament should bring their handicaps certified by their club professionals. Dr. S. S. Hall, Clarksburg, and Dr. R. H. Dunn, South Charleston, are in charge of the tournament for West Virginia. Plans are being made for a golf tournament banquet on Sunday evening at the Casino.

Another convention activity of interest will be the second annual tennis tournament, with participants from both societies. There will be no entrance fee this year. Arrangements are being made by Dr. William A. Thornhill, Medical Arts Building, Charleston. Doctors who plan to enter the tennis tournament should get in touch with Dr. Thornhill.

A number of special meetings, luncheons and dinners are being arranged for the joint convention. These include the alumni of the Medical College of Virginia, Jefferson Medical College alumni, the pediatric groups of the two states and others. Other special groups that plan to hold special meetings or luncheons should get in touch with the Association's headquarters office in Charleston.

Present indications are that there will be between 700 and 800 members of the two societies in attendance at White Sulphur. This will mean a total attendance of approximately 1,000 persons. While the facilities at the Greenbrier will probably be adequate, we suggest that advance reservations be made by those who are planning to attend. This will insure comfortable accommodations. For those who prefer to stay in the village of White Sulphur Springs, we recommend the Alvon, the Hart and the West Virginian, with rates from two dollars up.

The first general scientific assembly of the two societies will be held on Monday morning, July 29, at 9:30 o'clock. All of the general scientific sessions will be limited to the morning hours from 9:30 to 12:30 o'clock. The afternoons will be given over to roundtable discussions of the various sections and specialty groups. The first meeting of the West Virginia House of Delegates will be held on Monday afternoon at 4:30 o'clock and the second and final meeting will be held on Tuesday evening following the addresses of the presidents of the two societies. Election of officers will take place at the Tuesday evening meeting.

The three day meeting will close with the convention festivities on Wednesday evening, July 31. This will include the usual prebanquet parties, the annual dinner, entertainment and dancing. A number of interesting features are being planned to highlight this occasion and the committee in charge has promised that speaking will be reduced to an absolute minimum.

For more detailed information regarding speakers, dates for special meetings, etc., we refer you to the item in the General News section of this issue of the JOURNAL.

OUR MENTAL HOSPITALS

As the years roll by it becomes more and more apparent that our state mental hospitals will never reach anything like maximum efficiency until funds are provided for proper maintenance. At present the appropriations are too small to provide adequate facilities for the care and treatment of our mental cases.

The appropriation for our state mental wards provides a little less than 50 cents per day per patient for complete maintenance. Out of this, about 15 cents per day goes for food. The insufficiency of this amount is indicated by the fact that in most of our jails the food allowance per inmate is 42 cents per day. If some of the jail money could be used for the insane, everyone would profit but the sheriffs.

The allowance for food is more or less typical of the state's niggardly attitude toward its mental institutions. It is well known to the medical profession that salaries of the professional staffs of these institutions are vastly inadequate. Not only is this true, but there are not enough doctors at our mental hospitals to render adequate treatment. As long as these institutions continue to have underpaid and undermanned medical staffs they will continue along the unsatisfactory pathway of mediocrity which they have been compelled to follow for many, many years.

At the present time there are more than 600 mental cases awaiting admission to our mental hospitals. In spite of crowded conditions, financial handicaps and lack of medical personnel, the staffs of the various institutions are to be commended for the work they are doing. With additional professional help, with more adequate facilities for treatment and with some provision for follow-up and after care, many of the present inmates of our mental hospitals could be restored to useful lives and the waiting list eventually absorbed.

This is election year. We call this matter to the attention of our readers with the hope that they will find an opportunity in the next few months to discuss the problem with some of their favorite legislative candidates.

THE MAYO FUSS

Well, the fur certainly has been flying recently in Minnesota and on the Pacific coast. The principle misunderstanding seems to have developed between the Oregon State Medical Society and the Mayo Clinic. As the matter has brought to the headquarters office a number of official bulletins and pronouncements from the parties involved, we feel that our readers should be let in on the story. Here it is:

In the summer of 1939 the Mayo Clinic and Foundation put on an exhibit at the San Francisco World's Fair. In the September 4, 1939, issue of *Life* magazine there appeared a profusely illustrated article relating to the facilities of the Mayo Clinic. On September 8, 1939, the House of Delegates of the Oregon State Medical Society adopted a resolution sharply censoring the Mayo Clinic and Foundation for the exhibit and the article and pictures in *Life* magazine. Of the exhibit, the Oregon resolution read "while ostensibly of a scientific character, is presented in such form as to make it a means of attracting patronage and hence commercial in nature." In its condemnation of the Clinic and Foundation, the Oregon society recommended that the matter be called to the attention of the American Medical Association and all the constituent state medical associations.

For some reason the matter was not called to the attention of "all the constituent state medical associations" until April 5, 1940. Under that date we received a copy of the Oregon resolution. We tucked it away in our "pending" file in the belief that it would soon come up again. It did.

On May 10, 1940, we received a communication from the Minnesota State Medical Association attacking the Oregon criticism. The Minnesota Association appointed a special committee to investigate the Oregon charges and this committee's report was adopted by the Minnesota House of Delegates on April 22, 1940. Briefly, the committee found that the Mayo Clinic had been urged by the California State Medical Society to put on the World's Fair exhibit and had agreed to do so provided the exhibit first met with the approval of the members of the California State Medical Society. Apparently it did.

In regard to the publicity in *Life* magazine, the committee reported that the facts showed that the Mayo Clinic did not furnish the magazine with any pictures or material, and furthermore, when learning that such an article was contemplated, conferred immediately with the officers and trustees of the American Medical Association and sought legal advice to determine if the magazine article could be legally stopped. The article could not be enjoined, reported the committee, because the material had been gathered by *Life* magazine's own employees.

On May 11, 1940, the Council of the Orgeon State Medical Society decided to call the whole thing off. On May 14 they notified "all the constituent state medical societies" of their regret for any injustice that may have been done. It was a lively encounter while it lasted, and we are glad it is over.

PATENTING NEW DRUGS

Condemnation of the growing tendency to patent new drugs in the name of universities and foundations has recently reached the JOURNAL from a number of different sources. There is apparently an organized drive being conducted either to stop or to curtail materially this practice. Our last communication on the subject was received from the Alabama Medical Association on May 15, reporting action of the House of Delegates of that organization.

The Alabama resolution calls attention to the fact that drug patents are usually presented to institutions by medical discoverers, that the effect of patents is to increase the price of the drugs because of imposed royalties, and that a considerable proportion of patients in need of new products are prevented from buying them because of the high price asked. As "this hardship is imposed upon the needy public through the acts of the discoverers under the guise of foundations," the Alabama resolution "condemns as unethical the patenting of drugs or medical appliances for profit whether the patent be held by a physician or be transferred by him to some university or medical research foundation. * * *"

Obituaries

Doctor Otis L. Aultz

Dr. Otis Ludington Aultz, prominent Kanawha county physician, died at his home in Charleston on May 14 at the age of 75 years. He had practiced in Charleston for almost 50 years. Ill health forced his retirement a few years ago.

Dr. Aultz was born in Kanawha county and received his academic education at Huntington and Ohio Wesleyan University. He later entered the College of Physicians and Surgeons, Baltimore, where he graduated in 1891. He later took postgraduate work at the New York Polyclinic College. In 1909 he was appointed health commissioner of Charleston and served in that capacity for eight years. He was also prominent in civic affairs, having served as a member of the city council of Charleston and as county physician for 12 years.

In 1936, following many years of active membership, he was elected an honorary member of the Kanawha Medical Society and the State Association. He is survived by his wife and two daughters.

The child who has a heart murmur should be allowed to carry on a reasonably normal, happy life, without too many restrictions, R. Earle Glendy, M.D., Boston, contends in *Hygeia, The Health Magazine.*

TWENTY-FIVE YEARS AGO

(From the June, 1915, West Virginia Medical Journal)

Original articles appearing in the June, 1915, JOURNAL were by Dr. J. W. Gilmore, Wheeling; Dr. B. B. Sturdivant, Harding; Drs. J. G. Pettit and Cecil Denham, Weston; Dr. J. L. Miller, Thomas; Dr. U. G. Cook, Beckley, and Dr. T. E. Romine, Charleston.

The June, 1915 issue was the convention number and contained the presidential address, "Potpourri Medicinalis", by Dr. Henri P. Linsz, president.

Our Forty-eighth Annual Session

"The annual meeting of the State Medical Association held in Huntington, May 12-14, was a pronounced success. The attendance of members and visitors exceeded 220, constituting it the largest meeting in the society's history. The program was exceptionally good. * * * The society was favored by the attendance of a number of very prominent men from other states. Dr. W. M. Beach of Pittsburgh, Dr. Thomas S. Cullen and Dr. T. A. Ashby of Baltimore, Dr. E. O. Smith and Dr. B. M. Ricketts of Cincinnati, Dr. A. W. Colcord of Pennsylvania, Dr. Bremerman of Chicago and Dr. Crile of Ohio were present and read papers which will appear later in the JOURNAL. * * *

"Too much cannot be said for the medical profession and people of Huntington for the work done in preparation for this meeting."

From the House of Delegates report: "Dr. H. R. Johnson of Fairmont offered the following resolution, which, after being discussed, was finally carried with some opposition: *Be It Resolved* by this body that it is the sense of this Association that the order of the Public Service Commission directing that all patients under its jurisdiction, and entitled to benefits under the recent Compensation Act, be sent to state hospitals instead of general hospitals is discriminatory and unfair to these general hospitals and to the physicians of the state, and, in many instances, unjust and inhumane to the patient."

"*Resolved*, That it is the sense of this Association that at the annual session the society be divided into a medical and surgical section, but that arrangements be made for one or more joint sessions of the two sections during the annual meeting."

From Dr. Linsz' presidential address: "The medical society of today is as essential to the general practitioner, surgeon and specialist as is his daily bread. While the bread is food for the body, the knowledge obtained in attendance on medical societies is food for the mind and soul. In these meetings, much toward the development and progress of medicine is accomplished. It is a curious fact to note, however, that the busiest and most progressive practitioners of medicine, and those always seeking knowledge, new light and new truths are usually in attendance. * * *

"What has become one of the greatest benefactors of this state is our State Board of Health, which stands second to no other board throughout the United States. Through its untiring efforts and perseverance it has educated the general public to know how to be clean, how to combat as well as prevent disease. * * * Our State Board of Health, through its most efficient secretary, Dr. S. L. Jepson, has delivered public health lectures throughout the state during the year. It has established a State Hygienic Laboratory, has published regularly a Bulletin of Health, which every physician should read carefully."

Gall-bladder in Children

Since 450 cases of gall-bladder disease in children less than 15 years of age are now on record, disorders of the biliary tract in children can no longer be regarded as rare; thus many of the vague "stomach aches" of children may really be manifestations of this disease, Victor Seidler, M.D., and Elizabeth Brakeley, M.D., Montclair, N. J., state in *The Journal of the American Medical Association* for May 25.

The two authors point out that: "The diagnosis of biliary tract disease during the early years of life may be reached by the same methods (x-rays) now employed for adults and is in no way more complicated or difficult than with adults. Because the symptoms so closely simulate those of appendicitis, differential diagnosis is often misused. Therefore the pediatrician (specialist in children's diseases) and the surgeon should be on the alert to recognize gall-bladder disease unerringly and to operate promptly when surgical treatment is indicated."

General News

The Joint Program

The completed convention program for the joint meeting of the medical societies of the two Virginias has been completed and will be published in full in the Convention Number (July) of the JOURNAL. The only detail remaining is the chronological arrangement for the speakers. Authorization has been secured to release the following program information:

Monday morning, July 29—Dr. Ralph M. Tyson, Philadelphia, "Management of Urinary Infections in Childhood"; Dr. George E. Bennett, Baltimore, "The Orthopedic Treatment of Arthritis"; Dr. Ross Golden, New York, "Lesions of the Small Bowel."

Monday afternoon, July 29—Roundtable on Pediatrics, with Dr. Tyson; roundtable on Industrial Medicine with Dr. Bennett; roundtable on Radiology with Dr. Golden; Virginia and West Virginia House of Delegates.

Tuesday morning, July 30—Dr. Walter Alvarez, Rochester, Minnesota, "The Patient Who Is Always Complaining"; Dr. Wesley C. Bowers, New York, "Sinus Therapy"; Dr. A. I. Folsom, Dallas, Texas, "The Female Bladder."

Tuesday afternoon, July 30—Oration on Medicine by Dr. Paul White, Boston; roundtable on Internal Medicine with Dr. Alvarez; roundtable on E. E. N. and T. with Dr. Bowers; roundtable on Urology with Dr. Folsom.

Tuesday evening, July 30—Presidential Addresses by Dr. Hugh Trout, Roanoke, Virginia, and Dr. Frank Langfitt, Clarksburg; Virginia and West Virginia House of Delegates.

Wednesday morning, July 31—Dr. Harvey B. Stone, Baltimore, "The Delayed Treatment of Appendicitis"; Dr. Carl M. Bowman, New York, "The Treatment of Delirium"; Dr. Frederick C. Irving, Boston, on "Obstetrics."

Wednesday afternoon, July 31—Oration on Surgery by Dr. Irvin Abell, Louisville; roundtable on Surgery with Dr. Abell and Dr. Stone; roundtable on Heart with Dr. Paul White; roundtable on Obstetrics with Dr. Irving.

Wednesday evening, July 31—Convention festivities, entertainment, banquet and dance.

Dr. Lyon Appointed

Word has just been received of the appointment of Dr. George Lyon, Huntington, as a member of the National Advisory Committee on Maternal and Child Health to the Department of Labor at Washington. The appointment was recently announced by Secretary of Labor Frances Perkins. The Advisory Committee is composed of representatives of a number of different interested national organizations. Dr. Lyon's appointment was partly due to his interest and experience in pediatric postgraduate problems and as chairman of the Committee on Postgraduate Education of the American Academy of Pediatrics.

Scholarship Winners

Eight of the 10 West Virginia scholarships for the annual two weeks' pediatric seminar at Saluda, North Carolina, have just been announced jointly by the Association's Committees on Maternal and Child Welfare and the State Health Department. These eight scholarships have been awarded to Dr. W. P. Bittinger, Summerlee; Dr. Fred Ben Quincy, Williamson; Dr. J. A. Streibich, Moundsville; Dr. A. A. Davidman, Logan; Dr. T. O. Snaith, Weston; Dr. S. A. Jacob, Bethany; Dr. A. G. Lanham, Ronceverte, and Dr. W. F. McFarland, Keyser.

The annual pediatric seminar at Saluda, near Asheville, is recognized as one of the outstanding short courses in pediatrics in the country and is widely attended by physicians from other states. The seminar faculty is made up of many of the nation's leading pediatricians.

Three more West Virginia scholarships will be awarded for the Saluda seminar. Scholarships include tuition and complete maintenance. The 1940 seminar will be held from July 15 to July 27.

Dedication of Osler Memorial

The old autopsy house where Osler worked at Blockley has been restored as the Osler Memorial Building, and will be dedicated on the grounds of the Philadelphia General Hospital, at Curie Avenue, near 34th and Pine Streets, Philadelphia, Pa., at 2:00 p. m., on June 8, 1940.

Original furnishings, including the necropsy table, have been collected. The painting by Dean Cornwell, N. A., of New York, entitled "Osler at Old Blockley," will be on exhibition during the celebration.

There are facilities in the building for the housing and preservation of relics of old Blockley, as well as Osleriana. The committee would welcome any additions to this collection.

A cordial invitation is extended to those who are interested, and especially those who are planning to attend the American Medical Association Convention in New York City, June 10 to 14.

M. C. of Va. Graduation

Commencement exercises closing the one hundred and second session of the Medical College of Virginia, Richmond, will be held June 4. There are 137 candidates for graduation; 68 in medicine, 26 in dentistry, 13 in pharmacy, and 30 in nursing.

Dr. Stuart Leslie Craig, an alumnus of the college, surgeon and a director of the New York Eye and Ear Infirmary, New York City, will be awarded the honorary degree of doctor of science at the graduation exercises. Dr. Reginald Fitz, lecturer on the history of medicine, The Harvard Medical School, will be the commencement speaker.

Fellowships in Chemistry

For the academic year 1940-1941, Abbott Laboratories has established fellowships in several universities with important departments of organic chemistry and biochemistry. The fellowships, carrying stipends of $650 per year, will be available to graduate students in the last or next to last years of graduate work leading to the doctorate degree. The recipients, who are to be selected by the universities in which their work is being done, are not limited as to the subjects on which they will work.

The object of the fellowships is to provide means for the carrying on of additional scientific work in American universities. The future progress of chemical developments in this country will depend upon the availability of well-trained and qualified men, and it is the intent of Abbott Laboratories in establishing these fellowships to lend encouragement in these general fields.

Grants will be made to the following universities: In organic chemistry—Cornell, Harvard, Illinois, and Michigan. In biochemistry—California, Columbia, and Cornell.

Openings For Health Officers

There are several openings for full-time health officers in West Virginia. The minimum starting salary for this position is $3,000.00 per annum with $600.00 per annum traveling expense account. Physicians with experience in public health have a salary range of $3,600.00 to $4,200.00 per annum with minimum traveling expense account of $600.00 per year. The following are the necessary qualifications for this position:

The physician shall not be more than thirty-five years of age if entering the public health field for the first time. He shall be a graduate of a class "A" medical school, as classified by the Council on Medical Education and Hospitals of the American Medical Association. He shall have served a minimum of one year rotating internship in an accredited hospital. He shall either be licensed to practice medicine in the State of West Virginia at the time of his employment or shall file application for license with the Public Health Council at its next succeeding meeting. Preference will be given to physicians who have had experience in the field of private practice. He shall have a minimum of six weeks' practical training in the West Virginia Public Health Training Center or its equivalent in field work and shall have completed a year's accepted course in public health prior to appointment or within three years of assuming office. He shall have satisfactory physical examination reports on file in the central office at the time of employment.

Any physician interested in public health work should get in touch with Dr. Bruce Pollock, director of County Health Work, State Department of Health, Charleston.

New York A.M.A. Session

The largest meeting in the history of the American Medical Association will get under way in New York on Monday morning, June 10, when the organization's ninety-first annual session opens, the program for which is published in the May 4 issue of *The Journal* of the Association.

For five days several hundred physicians will unselfishly share the results of their patient and exhaustive research into all phases of medicine and surgery with the more than ten thousand members of the Association who are expected to attend the sessions. Not only will the attending doctors gather to acquire knowledge of the newest weapons for their constant battles with the afflictions of mankind but they will also discuss and formulate plans for the increased protection and promotion of the health of the nation.

Annual sessions of the Association are, generally speaking, divided into three classifications. The scientific meetings are devoted to the reading of papers dealing with the medical advances made during the past year. These papers are presented and discussed by doctors who are leaders in their respective fields of medicine. Augmenting these meetings are the exhibits, divided into scientific and technical sections. The scientific exhibits provide the attending doctors with what might be termed a "visual education" in the latest contributions to medical knowledge. Many of them are correlated with papers read before the scientific meetings. In the technical exhibits the practicing physician is given the opportunity of seeing and examining hundreds of new instruments, the latest advances in hospital equipment, the newest books and a wide variety of devices designed by the manufacturers for the convenience of the patient and the physician.

The third portion of the sessions involves the House of Delegates, the body which governs the Association and determines its policies. It is the voice of organized medicine. The House is a democratically constituted body, composed of 174 members representing every state in the union, the District of Columbia, Alaska, Hawaii, the Panama Canal Zone, the Philippine Islands, Puerto Rico, the sixteen scientific sections of the Association, the Medical Corps of the Army and the Navy and the United States Public Health Service.

The ninety-first annual session will get under way at 10 a. m., Monday, June 10, when the House of Delegates convenes in the Basildon and Jade rooms of The Waldorf-Astoria.

At two p. m., Monday, the General Scientific Meetings will open in the grand ballroom of The Waldorf-Astoria, the program being presented by New York physicians. This will be the second year that physicians in a city in which the session is being held have been allowed to contribute papers to the scientific program. The Tuesday morning program will be devoted to a symposium on chemotherapy or chemical treatment and the afternoon program will be divided into medical and surgical division meetings.

A fourth Symposium on Health Problems in Education will be held at two p. m., Tuesday, in the grand ballroom of The Roosevelt under the sponsorship of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, together with the Association's Sections on Ophthalmology; Laryngology, Otology and Rhinology; Pediatrics, and Preventive and Industrial Medicine and Public Health.

On Tuesday night, at eight o'clock in the grand ballroom of The Waldorf-Astoria, at the opening General Meeting, Nathan B. Van Etten, M.D., of New York, will be installed as president of the American Medical Association for the coming year. He will succeed Rock Sleyster, M.D., of Wauwatosa, Wis. Gov. Herbert H. Lehman, of New York, and Mayor F. H. LaGuardia, of New York City, will deliver addresses of welcome. The meeting will be opened by Walter P. Anderton, M.D., president of the Medical Society of the County of New York.

Another feature of the Tuesday evening meeting will be the presentation of the Distinguished Service Medal of the Association, awarded annually to a recipient elected by the House of Delegates for outstanding scientific achievement.

The sixteen sections of the scientific assembly will open their sessions Wednesday and from then until they close Friday afternoon more than 275 papers will be presented.

Public Health Officers

The necessity for medical as well as scientific training for public health officers is recognized in the recently published recommendations concerning the educational qualifications of health officers by the Committee on Professional Education of the American Public Health Association, *The Journal of the American Medical Association* for April 27 says in commending the recommendations.

"In general," *The Journal* says, "these involve the completion of a course leading to the degree of Doctor of Medicine in a recognized medical school, one year's internship in an approved hospital including a service in communicable diseases, a preliminary period of supervised field experience in a well organized department of health and a period sufficient to give acquaintance with public health activities in general and especially an opportunity for the candidate to determine his own liking and fitness for a career in public health. Finally there should be at least one full academic year devoted to the study of public health in a suitable university.

"These recommendations should have great value in educating the public to the necessity for having trained men in charge of public health activities."

County Society News

Boone County

The Boone County Medical Society met in the office of Dr. W. V. Wilkerson at Prenter on May 16. The guest speakers were Dr. Jack Basman and Dr. Henry Baum of Charleston. Dr. Basman gave an excellent paper on "The Diagnosis and Management of the Acute Abdomen in the Young Patient." Discussion was opened by Dr. Ray I. Frame, the society's president, and a general discussion followed.

Dr. Baum, Charleston obstetrician, gave a very instructive and interesting talk on "The Recognition and Management of the Common Complications Encountered in Home Deliveries." An interesting and practical discussion followed.

After viewing with pride the doctor's office and one of Boone county's cleanest and most up-to-date coal mining towns, the doctors enjoyed a delightful luncheon and refreshments served by Dr. and Mrs. Wilkerson. The secretary was instructed to forward the society's check for $15 to the National Committee for the Extension of Medical Service. The next meeting will be held at the home of Dr. and Mrs. W. F. Harless of Madison on Thursday, June 27, at seven p. m.

Those present at the May 16 meeting were Drs. Wilkerson, Frame; Paul R. Gerhart, Clarence C. Lewis, A. E. Glover, H. H. Howell, W. F. Harless, R. L. Hunter, Dr. Basman and Dr. Baum.

R. L. HUNTER, *Secretary*.

Cabell County

Dr. Henry M. Goodyear of Cincinnati, Ohio, was the guest speaker at the May 9 meeting of the Cabell County Medical Society, which was held at the Governor Cabell Hotel, Huntington. Dr. Goodyear's subject was "Important Factors in the Diagnosis and Treatment of Ear, Nose and Throat Conditions of Interest to the General Practitioner." This was an interesting and practical presentation.

JAY L. HUTCHINSON, *Secretary*.

Fayette County

The Fayette County Medical Society held its regular monthly meeting on May 7, 1940, at the Methodist Church, Oak Hill, where a large audience of members and visitors heard an excellent presentation of "Diarrheas of Infancy", by Dr. H. J. Gerstenberger, of the Department of Pediatrics, of Western Reserve Medical School, Cleveland.

Dr. Edward V. Nutter, Gauley Bridge, and Dr. E. S. Hamilton, Oak Hill, were accepted into membership in the society.

The next meeting of the Fayette County Society will be held at Fayetteville in the court house, Tuesday, June 25, at eight p. m. Dr. Warren T. Vaughn of Richmond, Va., will speak on "Some Practical Phases of Allergy."

Meetings of the society will be cancelled for the months of July and August due to the State Convention and the postgraduate courses. The latter will be held in Montgomery for Kanawha, Clay, Nicholas, and Fayette counties. Dr. Phillip Becker of Kimberly will act as chairman of the postgraduate course here.

G. A. DANIEL, *Secretary*.

Kanawha County

Dr. Henry Dixon, Professor of Neurology and Psychiatry of the University of Oregon Medical School, Portland, was the guest speaker at the May 14 meeting of the Kanawha Medical Society which was held at the Daniel Boone Hotel, Charleston. He presented a highly interesting discussion of the management of the anxiety states by practitioners in all fields of medicine, and the care of the psychic components of organic disease.

Dr. Dixon addressed the society at five o'clock. Dinner followed at 6:30 o'clock, after which the regular business meeting of the society was held. A large number of visitors from neighboring county societies attended.

W. A. THORNHILL, *Secretary*.

Lewis County

The regular monthly meeting of the Lewis County Medical Society was held at the Weston General Hospital, Weston, on the evening of May 21. The special guest of the evening was Dr. Frank V. Langfitt, Association president, who spoke on "Medical Economic Problems from the Standpoint of County, State and Nation." Mr. Joe Savage, state secretary, was also present and gave a short talk. There were 12 doctors in attendance.

Following the program, delightful refreshments were served with Dr. A. F. Lawson acting as host to the society.

E. A. TRINKLE, *Secretary*.

Logan County

The Woman's Auxiliary to the Logan County Medical Society gave the annual Doctors' Day Dinner to our society at its regular meeting at the Woman's Club on Wednesday evening, May 8, at 6:30 o'clock. Dr. Albert H. Hoge, Bluefield, was the guest speaker of the evening. His subject was "Fads and Fallacies of Endocrinology."

The society took definite action to have a scientific exhibit at White Sulphur Springs if the proper arrangements can be made. Delegates to the State meeting will be Dr. J. L. Patterson, two-year term, and Dr. I. M. Kruger. Alternates are Dr. E. H. Starcher and Dr. F. E. Brammer.

J. W. CARNEY, *Secretary*.

Mercer County

The Mercer County Medical Society met in the Municipal Building, Bluefield, on April 25 with 35 members in attendance. During the business session, Dr. H. J. Wiser and Dr. L. W. Hewit were duly elected to membership. The society voted to endorse a movement for a full-time county health unit.

The guest speaker was Dr. Walter E. Vest, Huntington, president of the West Virginia Public Health Council. His subject was "Medical Obligations." Dr. Vest called attention to the need for supervision of medical education and recommended the creation of a state committee for this purpose. Dr. Vest called attention to the work of the Association's Postgraduate Committee which plans to make postgraduate training available to the men in general practice in West Virginia.

A committee composed of Dr. Laurence Pace, Dr. Ira Smith, Dr. Daniel Hale and Dr. Frank J. Holroyd was appointed to secure an injunction against certain illegal practitioners and quacks in Mercer county.

FRANK J. HOLROYD, *Secretary*.

Monongalia County

The Monongalia County Medical Society was host to the Tri-County Medical meeting at the Morgantown Country Club on Friday evening, May 17. There was an excellent turnout from the Marion and Harrison county societies. Dinner was served at 6:30 o'clock.

The guest speaker of the evening was Dr. James J. Joelson, Assistant Professor of Genito-Urinary Surgery, School of Medicine, Western Reserve University, Cleveland. Dr. Joelson discussed "Tumors of the Adrenal Gland."

CARL E. JOHNSON, *Secretary*.

Ohio County

Dr. Victor Carabba, Assistant Professor of Surgery, New York University, was the guest speaker at the May 3 meeting of the Ohio County Medical Society at the Ohio Valley General Hospital. His subject was "Electrosurgical Aseptic Intestinal Anastomosis." Discussion was opened by Dr. H. C. Harpfer and Dr. John S. Gaynor.

The annual banquet and golf tournament of the society was held at the Wheeling Country Club on the afternoon and evening of May 23 with a fine attendance. Dr. Frank V. Langfitt, Association president, was the guest of the society on this occasion.

At the business meeting of the society on May 17, Dr. J. O. Rankin was elected president to succeed Dr. Earl S. Phillips, who has served during the past year. Dr. Carl S. Bickel was elected vice president; Dr. H. G. Little, secretary, and Dr. E. N. Pell, treasurer.

Other officers elected included the Board of Censors consisting of Dr. R. B. Bailey, Dr. H. C. Harpfer and Dr. E. S. Phillips; delegates, Dr. J. O. Rankin, Dr. Ivan Fawcett, and Dr. Robert Armbrecht; alternate delegates, Dr. R. J. Reed, Jr., Dr. J. K. Stewart, Dr. E. S. Phillips and Dr. C. H. Clovis.

R. W. LUKENS, *Secretary*.

Parkersburg Academy

The April 13 meeting of the Parkersburg Academy was held at St. Joseph's Hospital. Guest speakers were Dr. W. E. Lee, Professor of Surgery, Graduate School of the University of Pennsylvania, and Dr. W. A. Wolf of the Department of Biochemistry. They presented an extremely valuable paper on the local and systemic treatment of burns. Particularly stressed was the inadvisability of forcing fluids above approximately 1,500 cc.'s per day for the first few days.

The academy went on record as approving the proposed tuberculosis sanitarium project in Wood county.

The regular monthly meeting of the Academy of Medicine of Parkersburg was held at the City Hospital on May 1, 1940, with Dr. J. L. Wade, president, presiding. Dr. W. J. Judy was elected

to membership. Delegates elected to the State meeting were Dr. Richard Hamilton, St. Marys, for the two year term, with Drs. Athey Lutz, C. L. Goodhand, E. B. Holmes and H. A. Giltner as alternates.

The academy accepted an invitation from Dr. William Tillson to have luncheon at the Viscose plant on Thursday, May 9. The academy also voted that all doctors' offices be closed on Thursday afternoons from May 1 to October 1. A committee consisting of Dr. Goodhand, Dr. Lutz and Dr. Prunty, was appointed to find out why rehabilitation cases are not properly rotated in Wood county and to report back at the academy's June meeting.

A. C. WOOFTER, *Secretary*.

Potomac Valley

The regular meeting of the Potomac Valley Medical Society was held at the Potomac Valley Hospital, Keyser, at noon on April 30. Lunch was served preceding the meeting, for which Dr. Thos. Bess of the hospital was given a rising vote of thanks.

The guest speaker was Dr. S. M. Jacobson of Cumberland, Maryland. He gave a highly interesting paper on the heart and the electrocardiograph. Those present were Dr. M. F. Wright, president, and Drs. Drinkwater, Love, Freedman, Wilson, Moomau, T. Huffman, Giffin, Flick, Easton, Daily, J. H. Wolverton, Jr., Thomas Bess, J. C. Lawson, McFarland, Jacobson and Courrier.

E. A. COURRIER, *Secretary*.

Preston County

The regular meeting of the Preston County Medical Society was held at Hopemont on May 9 with medical students from West Virginia University as guests of the society. Following dinner, the scientific program was presented by Dr. John C. Kerr of Clarksburg. This was a dermatological clinic with presentation of skin cases and showing of slides. The society voted to sponsor the postgraduate refresher courses offered by the State Association and plans are being made to give the courses at Hopemont Sanitarium. Physicians from Barbour, Tucker, Taylor and Monongalia counties will be invited to attend the series, starting the week of July 14.

C. Y. MOSER, *Secretary*.

BOOK REVIEWS

Handbook of Orthopedic Surgery

Handbook of Orthopedic Surgery, Alfred R. Shands, Jr., and Richard B. Raney. Second edition, The C. V. Mosby Company, St. Louis, 1940.

This is a clearly and simply written account of the proven knowledge of orthopedic surgery. The authors have covered the field in a concise manner, there being no theoretical discussion. The use of line drawings to illustrate the text is to be commended, even the röentgenograms being reproduced in this manner which is much more satisfactory than the usual way in which x-rays are shown.

No attempt has been made to enter into a discussion of many of the rare diseases, which are seldom seen. The book is not recommended as a standard text-book on orthopedic surgery because of its brevity, but it should prove valuable to medical students and nurses.

—H. A. SWART, M.D.

The Patient's Dilemma

The Patient's Dilemma by Hugh Cabot, M.D., Reynal and Hitchcock, Inc., New York.

Hugh Cabot has long been known as a surgeon and teacher and recently has earned certain notoriety as a proponent of the plan of "medical reform" as set forth by the New Deal. The book is not recommended because this reviewer agrees with Cabot's diagnosis, prognosis and treatment. Quite the contrary. In so far as diagnosis is concerned, Cabot does a characteristically good job of depicting the present situation in the field of medical practice. A notable failure seems to be his lack of appreciation of what the public wants from and receives from the general practitioner. Perhaps it is not surprising that Cabot should have fallen down in this respect—like some other friends of the "underprivileged", his contacts have been rather limited. So far as this reviewer can find out, Cabot has never been a general practitioner.

Doctor Cabot proposes the increased grouping of specialists along the lines so brilliantly established by the Mayo Clinic. A very large percentage of the public and profession will agree with him. In his more detailed efforts to organize practice, he calls for a supervisory board of experts, financing by the Federal Government and participation and

local administration by states. It is in this portion of the work that this reviewer wondered why the book had not been entitled, "Cabot's Dilemma." In the light of present administration of the government bureaus and commissions it calls for a considerable degree of naivete to suppose that anything efficient could be hoped from similarly picked experts in medical administration.

Doctor Cabot cites as efficient standard making and refereeing bodies the Interstate Commerce Commission and the Federal Communications Commission. One wonders how closely Doctor Cabot reads of the doings of these commissions. One wonders why he did not also cite the National Labor Relations Board, the National Coal Commission, the Security Exchange Commission, etc. On the other hand, one finds the following statement: "The opposition to government action has all along come from organized medicine. They have feared—and properly—that government intervention might result in lowering of standards. * * *"

Doctor Cabot also intimates, "it might well come about that there should be set up parallel with the body of medical experts a body of experts in economic fields," and this after eight years of so-called economic experts!

It seems a weakness of the entire idea of this arrangement of practicing medicine from on high that very little or no consideration is paid to the desires of the intended beneficiaries. There are those of us who know that the same qualities that make people recipient of the doctors' charity also render those people unable to cooperate with the doctors' efforts. Any doctor who has worked in a free venereal clinic will attest fully to this. Doctor Cabot also states that the apparent good health of the American people is more due to our high average standard of living than to any excellence on the part of the medical profession. To this reviewer it has seemed curious that other reformers as well as Doctor Cabot have not sought to emphasize the need of raising the economic level of those needing better medical attention rather than to lowering the standard of medical efficiency. Pragmatically, such efforts would seem more conducive to the more abundant life and certainly would be easier on the taxpayer.

Doctor Cabot never departs far from the function of the expert in his proposed scheme of med-

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OBSTETRICS—Two Weeks Intensive Course starting October 21st. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course starting September 9th. Informal and Personal Courses every week.

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icine and in his closing sections, speaking of "the duty of the government to set up a general medical council or commission charged with the business of establishing and maintaining standards," he says, "in the creation of such a supervisory body will be required all the wisdom which government can muster. Not only must the individuals serving in this body be selected with the greatest care but they must be assured of satisfactory emollument, freedom from political pressure from either side, and, as I believe, satisfactorily provided as to their future." One can recall some Supreme Court appointments of recent years. One may also recall that wisdom and long range planning apart from the minds of the Utopians have little place in the conduct of government affairs. Votes, expediency and the easiest way out of any situation invariably condition the conduct of government affairs.

Doctor Cabot cites in his seemingly plausible reasoning by analogy that government has been vitally interested in education and he mentions that many of the outstanding medical schools are state-supported. A recent report from the Carnegie Foundation also mentions that of the ten outstanding universities of this country only one state supported university qualified—at the bottom of the list.

Cabot's Dilemma—in diagnosis, the real Cabot. In treatment, one gets the impression that while the author is still one of us at heart, he has lost his way. This reviewer has enjoyed several personal conversations with Hugh Cabot, has read his numerous writings with delight and profit, and has been glad to sit on the benches at his clinic. The admiration remains but there is also the feeling of regret that Cabot either had written a more convincing apologia or had not written at all.

Every doctor who is interested in the evolution of medical practice and particularly that phase of it that is commonly spoken of as state medicine should read this book. The well-informed physician will easily see the superficial plausibility and the essential falsity of the argument for this kind of government participation in medical practice. It is not likely that the committee of cloistered physicians who have backed this program will find a more lucid proponent than Cabot.

Modern hearing devices, which are proving invaluable aids to the majority of deafened persons not too proud to wear them, are less conspicuous than eyeglasses, Austin A. Hayden, M.D., Chicago, declares in *Hygeia, The Health Magazine* for June.

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*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, Vol. 23, No. 2, pages 201-206, March, 1939.

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Woman's Auxiliary

Convention Plans

Ten valuable prizes are to be awarded among the doctors' wives who participate in the golf tournament at White Sulphur Springs during conventions of the Women's Auxiliaries to the West Virginia and Virginia Medical Societies, July 29 to 31.

Mrs. Edwin J. Humphrey, Jr., president of the Cabell County Auxiliary, and chairman of the state convention golf tournament, has arranged for a series of prizes that will enable every golfer—skilled or not so skilled — to participate with a splendid chance of winning a prize. The tournament, which will be for members of the Auxiliary, will be held Tuesday afternoon, July 30, at three o'clock and golfers should register with the pro at White Sulphur Springs that morning. Golfers must bring with them their golf handicap signed by their own club pro when they register for the tournament.

The first and second prizes to be awarded will, of course, be the best. The first prize will be for low score in 18 holes while the second prize will go for low score on 18 holes with handicap. Other prizes follow:

Third: Second low score with handicap.
Fourth: Third low score with handicap.
Fifth: Blind bogey.
Sixth: For fewest putts.
Seventh: Low total on four short holes.
Eighth: All nearest hole on No. 18.
Ninth: Most five strokes in 18 holes.
Tenth: Booby prize for worst score without handicap.

Tennis matches will be held Wednesday afternoon and there will also be swimming and other sports events for that same afternoon.

The convention, which for the first time will bring Auxiliaries together from both West Virginia and Virginia, will be opened informally Monday afternoon, July 29, with a tea to be given by the Greenbrier Hotel. Formal opening of business sessions will take place Tuesday morning at nine

(Continued on page xxv)

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o'clock. Luncheons will be held both Tuesday and Wednesday, and the past presidents of the West Virginia Auxiliary will have their annual breakfast Wednesday morning at eight o'clock. The closing general session will follow at nine o'clock.

Many social events have been planned for the convention which will be participated in by members of the Auxiliary groups from both states and there will also be other events, arranged by the medical societies, that promise to make the gathering one of the most enjoyable and among the most colorful ever held in West Virginia.

Mrs. V. E. Holcombe of Charleston will preside. Mrs. James S. Klumpp, Huntington, is convention chairman.

Cabell County

The Woman's Auxiliary to the Cabell County Medical Society met on May 13 at the Morris Memorial Hospital. Mrs. E. H. Humphreys presided and eighteen members were present.

This meeting was in the nature of a tour, to visit the hospital for crippled children.

There will be no more meetings of the Cabell County Auxiliary until the Fall.

MRS. A. G. RUTHERFORD, *Secretary*.

Fayette County

The Woman's Auxiliary of the Fayette County Medical Society met at the Faymont Hotel, Montgomery, Tuesday, February 13 at one o'clock. Mrs. R. A. Updike presided over the meeting and ten members were present. Mrs. D. B. Kraybill addressed the Auxiliary on "What Constitutes an Educated Woman."

The March meeting of the Fayette County Auxiliary was held on the nineteenth at the Montgomery Woman's Club. This meeting was in the form of a tea. Mrs. Updike presided as president, and 14 members were present. There was an out-of-town speaker—Mr. Joe Savage, the executive secretary of the State Association, and he spoke very entertainingly on "Quackery in West Virginia." A nominating committee was appointed, composed of Mrs. Hogshead, Mrs. Bittinger and Mrs. Troutman.

On Tuesday, April 16, the Fayette County Auxiliary held their regular monthly meeting at the Mountainair Hotel, Mount Hope, and 10 members and three guests were in attendance. Mrs. W. V. Wilkerson of Prenter spoke on "Dietetics."

(Continued on page xxvi)

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The following officers were elected for the coming year: President, Mrs. George Fordham; first vice president, Mrs. H. C. Skaggs; second vice president, Mrs. S. W. Price; third vice president, Mrs. C. W. Stallard; recording secretary, Mrs. W. B. Davis.

The regular May meeting will be held at Montgomery.

ELIZABETH K. DAVIS, *Secretary*.

Marion County

The Woman's Auxiliary to the Marion County Medical Society met at the Fairmont Hotel, Fairmont, on April 30, 1940. The president, Mrs. J. R. Tuckwiller of Fairmont, presided over the meeting. Twenty members were present.

Mrs. James Clinton of Fairmont spoke on the entertaining and interesting subject, "The Age of Reducing."

New officers were elected as follows: President, Mrs. Charles L. Parks; president-elect, Mrs. Emory Wise; vice president, Mrs. George T. Evans; recording secretary, Mrs. J. W. Davis, and treasurer, Mrs. John Paul Trach.

MRS. J. W. DAVIS, *Secretary*.

Parkersburg Academy

The Woman's Auxiliary to the Academy of Medicine of Parkersburg held their regular month-

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ly meeting on May 14 at the Chancellor Hotel, Parkersburg. Mrs. Welch England, president, called the meeting to order and there were twenty-four women present.

Mrs. E. C. Hartman spoke on the life of Dr. T. A. Harris of Parkersburg who was president of the State Medical Association in 1886. This information is to be used in a book compiled of all past presidents of the state organization.

The following delegates and alternates to the State Convention of the Auxiliary to be held at White Sulphur Springs in July were elected as follows:

Delegates: Mrs. B. O. Robinson, Mrs. Charles L. Goodhand, Mrs. Archbold M. Jones. Alternates: Mrs. R. H. Wharton, Mrs. James L. Wade and Mrs. R. B. Miller.

MRS. ARCHBOLD JONES, *Secretary*.

Raleigh County

The Woman's Auxiliary to the Raleigh County Medical Society met on March 25 at the Beckley Hotel, Beckley. Mrs. E. S. Dupuy, president, presided over the meeting at which ten members were in attendance.

Mrs. W. C. Covey reviewed an article, "Worries of the World", by Dr. Raymond T. Goldman.

Mrs. E. S. Dupuy spoke on "Doctors' Wives", written by Mrs. David Long.

The nominating committee was appointed to choose officers for the year 1940-1941.

On April 29, the Raleigh Auxiliary held their meeting at the Beckley Hotel with twenty-two members present. Mr. Joe W. Savage, secretary of the State Medical Association addressed the group on "Economics of Organized Medicine."

The following officers were elected: Mrs. E. Newton Dupuy, president; Mrs. J. E. McKenzie, secretary; Mrs. H. A. Shaffer, corresponding secretary, and Mrs. L. M. Halloran, treasurer.

MRS. W. C. MAYS, *Secretary*.

A seven year survey of the incidence of tuberculosis in New York City conducted by the Ctiy Health Department indicates that about 2.5 per cent of the population is afflicted with the disease and that about 85 per cent of those so afflicted are unaware of the fact. The highest percentage of tuberculosis —5.3 per cent—is to be found among the city's homeless men and the lowest among the college students—0.2 per cent.

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Laboratory Technicians:
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Neighbor Journals

Economic Questions

Being doctors and not political economists, here are a few questions we should like to have answered:

Why do wealthy citizens establish foundations, the activities of which are largely devoted to the establishment of socialism in medicine?

Why do certain individuals who have prospered by reason of their own industry and initiative become parlor socialists and even communists, ignoring the fundamental biological necessity so tersely stated in the phrase "Root, hog, or die"?

Can human nature resist the temptation to spend money in riotous living and to ignore the virtue of saving if there is assurance that thrifty neighbors through taxes will furnish support in later years of poverty?

Is there any reason why the medical profession should be socialized and not lawyers and merchants?

Why do certain advocates believe that a governmental bureau with a large personnel and a lot of red tape can supply medical care to our citizens without an enormous increase in total cost?

Why do the same individuals believe that in a panel system patients will receive the same individual medical attention as they now do?

What country with any form of government sickness insurance has better health and a lower death rate than the United States?

What in case of free medical service is to prevent neurotics from making life intolerable for salaried government physicians by reason of needless day and night calls?

What reason is there to believe that there would be a common objective for the worker relating his subjective symptoms for the purpose of obtaining certification for sickness benefit, and for the doctor whose object is to cure the worker?

Why does our government continue to buy gold at a pegged price when gold is no longer a medium of national or international exchange?

Why does our government continue to buy silver at a pegged price when it is considered the height of folly for an individual to pay more for anything than is necessary?

Why does our government deliberately favor higher wages and thus higher cost of production, which everyone knows necessitates a lowering of

(Continued on page xxx)

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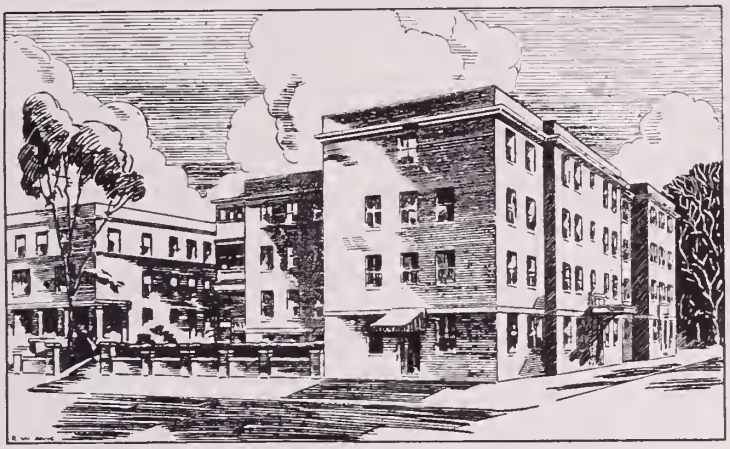

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consumption of goods, a higher tariff and less foreign trade?

Why do some believe that the economic law of supply and demand can be circumvented by legislation?—*Minnesota Medicine.*

Another Hospital Catastrophe

On October 23, 1939, according to the *Associated Press*, five out of six babies in the nursery of the Perth Amboy (N. J.) General Hospital were asphyxiated by escaping steam from a radiator valve. An investigation showed that the condition of the valve was so bad that the thread had little or no holding power with the thread in the radiator. The valve had two pieces of adhesive tape attached to it, and there were particles of the adhesive material on the radiator on each side of the hole where the valve was attached to the radiator. This report also stated that there was a rust streak on the radiator, which indicated the valve had been leaking for some time. The investigator said that from the condition of the thread of the air valve it was his opinion that it could have been dislodged either by a jar of the radiator or by the normal pressure of steam.

The babies ranged in age from four to forty days. The coroner said the deaths were due to "asphyxiation by steam."

The hospital superintendent said the steam exhausted the supply of oxygen in the room between 1:30 a. m., when the nurse in charge made a routine check of the nursery temperature, and 2:00 a. m., when she returned to take the babies to their mothers for feeding.

The superintendent said she did not know how it happened. The mothers unaware of the mishap went back to sleep when the babies were not brought to them and were not awakened until four a. m., when they were advised of the happening.

The *New York Times* stated that the Middlesex county grand jury, which investigated the deaths of the five infants from steam asphyxiation in the Perth Amboy General Hospital on October 23, handed up a presentment, December 8, urging replacement of the management and nursing executive staff.

In the presentment, filed with Judge Adrian Lyon, the grand jurors called for a "general reorganization, employment of capable and efficient employees for the better maintenance and operation

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of the hospital and its equipment," and the "immediate conversion or modernization of the heating system and equipment." No individuals were mentioned in the document.—*Pennsylvania Medical Journal.*

Wrong Use of Terms

Probably no term has been more confusing to the general public and has been put to greater misuse by many than the term "socialized medicine." Everybody and his brother nowadays seems to be talking about socialized medicine but few have anything but a hazy idea as to the meaning of the term. Obviously, this is not unusual, for as one writer has pointed out "the term is almost perfectly indefinite."

One of the standard tricks of the advocates of new-fangled social philosophies is to accuse the medical profession of being unalterably opposed to "socialized medicine" and then to point to the great good which has been accomplished by certain medical and health programs which are nothing more or less than community projects carried on in a collective manner, i.e., socialized undertakings. By pulling this old gag, the medical profession's critics attempt to belittle the profession and to leave the inference that it stands in the path of progress.

Socialized health and medical activities have been with us for years. Work of our health departments and institutionalized care of the handicapped and disabled are examples of community endeavors financed from public funds—socialized medical and health programs. To say that the medical profession has opposed such activities is to reveal astounding ignorance of the facts. On the other hand, the medical profession is the daddy of such activities.

In order to keep the record straight, the medical profession should try to set the public right on its use of terms. Let's make it perfectly clear that the profession does not oppose "socialized medicine" *per se* but does oppose schemes and systems aptly described by *The Journal of the A.M.A.*, as "politicalized medicine" or "state-managed" medicine. Also, let's not forget the terms "tax-supported medical service" and "compulsory sickness insurance." When giving the public the facts, let's be careful to accurately define the issues and the real questions under discussion.—*Ohio State Medical Journal.*

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THE MANAGEMENT OF HEAD INJURIES*

By J. M. MEREDITH, M. D.
University, Virginia

We propose to consider, in order, the following significant subjects relative to the management of head injuries: (1) important points in the diagnosis of the essential lesion; (2) certain relevant facts concerning the (a) non-operative and (b) operative treatment; (3) a brief review of a statistical survey of an unselected series of 391 cases of acute head injury; (4) a short summary of the important complications; (5) a description of four unusual instances of head trauma.

1. DIAGNOSIS

The most important single observation in head trauma is the state of consciousness. The pulse may be somewhat slow, the blood pressure and temperature elevated, etc., but if the patient can be aroused with little or no stimulation, we need not fear that an acute emergency, such as an extra- or subdural clot, is being overlooked.

THE AUTHOR

Dr. Meredith, graduate University of Pennsylvania School of Medicine, 1930; Fellowship in Surgery and Neurosurgery, Lahey Clinic, Boston; Resident Neurosurgery, Medical College of Virginia; Assistant Clinical Professor of Neurological Surgery, University of Virginia.

The term concussion or "commotio cerebri" indicates a loss of consciousness with early return to a completely normal sensorium. There is no macroscopic intracranial bleeding and rapid recovery is the rule, although the post-traumatic syndrome (headache and vertigo) occasionally follows a simple concussion (in many patients in which compensation is not a factor) and is more annoying than in many another case that has a severe brain injury but eventually recovers. Contusion implies gross bruising, even laceration, of the brain and is frequently associated with subarachnoid hemorrhage. It is occasionally quite difficult to distinguish it from a developing subdural clot, especially when localizing signs in the pupils and extremities de-

*From the Department of Neurological Surgery, University of Virginia Hospital and School of Medicine, Dr. C. C. Coleman, director. Read before the Fayette County Medical Society, Montgomery, West Virginia, March 12, 1940, and the Logan County Medical Society, Logan, West Virginia, June 5, 1940.

velop, associated with stupor, slowing of the pulse and respiration. When in doubt, it is our custom to make bilateral cranial burr openings under novocaine anesthesia.

Skull x-rays are made of all patients who are hospitalized sometime before hospital discharge. This is important not only for the immediate management of the case in critical patients, but also medico-legally. It is easy to mistake a hematoma of the scalp with a firm periphery for a simple depressed fracture. Furthermore, as emphasized by Coleman,[1] "the limitations of x-ray examination in the demonstration of fracture lines at the base of the skull are well known and the diagnosis must generally depend on such effects of the fracture as bleeding from the cranial orifices, cerebrospinal fluid leaks, suggestive ecchymoses and palsy of the cranial nerves." Battle's sign (late discoloration over the mastoid) or late discoloration about the eyes is particularly suggestive of a fracture of the middle or anterior fossa respectively.

PALPATE UNDERLYING SKULL

It is most important to inspect or, better still, to palpate, with the gloved finger, the underlying skull in all cases of scalp lacerations. This precaution, together with complete x-ray examination (skull) of all patients admitted to the hospital with a history of unconsciousness, will prevent one from overlooking a compound depressed skull fracture that should be repaired immediately, if the patient's condition permits. The surgeon can never be certain (from the x-ray examination or, in most cases, by actual inspection of the fracture) whether the dura is intact in depressed fractures, a fact of enormous importance in the mechanism of production of serious intracranial infection, such as a subdural abscess, brain abscess, or meningitis.

An increasing stupor, developing in the first few hours or days after trauma, together with signs of increased intracranial pressure, chiefly slowing of the pulse and respiration and the advent of localizing signs in the extremities (reflex inequalities, pathological reflexes, relative weakness of one arm and leg or convulsions) and pupils calls for operative intervention with the probability that an acute or subacute subdural or extradural clot is present.

Middle meningeal hemorrhage is practically always associated with a linear fracture of the temporal bone although not all such fractures, by any means, are associated with middle meningeal hemorrhage. Also, a massive extradural clot over the posterior temporoparietal region may be due, not to middle meningeal hemorrhage, but to a tear in the lateral sinus. We have recently had such a patient from whom a large extradural clot was removed overlying the right cerebral hemisphere; the bleeding point was found arising from the lateral sinus and it was controlled with a muscle implant; the middle meningeal artery was intact. Not all extradural clots produce acute symptoms warranting operation; several weeks after injury, the advent of choked discs or other neurological signs may indicate increased intracranial pressure from such a clot, as demonstrated by a patient (a twelve year old white boy) operated on at the University of Virginia Hospital (No. 127623) by Dr. E. P. Lehman in 1936. His patient recovered after the removal of a large extradural clot three and one-half weeks after the injury; he was quite conscious and rational after the first week following the injury but he developed high choked discs and diplopia, which complications were promptly relieved by operation.

Examination of the fundi is of little value for the determination of increased intracranial pressure in the first day or two after head trauma, although it is useful from the standpoint of differential diagnosis in an unconscious patient. The use of mydriatics is to be avoided.

2. NON-OPERATIVE TREATMENT

Every patient with a definite history of unconsciousness, if seen by us shortly after injury, must remain in the hospital at least overnight, or sign a release, relieving the hospital of all responsibility. To this rule

there is rarely any exception. This prevents a patient from going home in the lucid interval that is characteristic of, but not invariably associated with, middle meningeal hemorrhage, and dying in the night, a tragedy which still occurs not infrequently.

Lumbar puncture has been performed in about fifteen per cent of all cases in the last few analyses of groups of head injuries in our clinic that have been made. It is of little value for the removal of erythrocytes which are almost all hemolyzed spontaneously or otherwise eliminated as shown by Sprong.[2]* Furthermore, its use is of questionable value in permanently reducing pressure, especially when fairly large amounts of fluid are removed rather rapidly. There is apt to be a secondary rise of pressure in a few hours, as demonstrated by Masserman.[4] Dandy[5] considers lumbar puncture of little or no use in the treatment of intracranial trauma. It should be reserved for the occasional patient who does not present clinical evidence of a massive extra- or subdural clot and whose sensorium apparently is improved and symptoms ameliorated by its use.

Occasionally, massive edema of the brain develops after head injury (associated with little or no hemorrhage) and the cerebrospinal fluid pressure remains constantly elevated. This is best treated by an occasional lumbar puncture, intravenous fifty per cent sucrose (50 c.c.) and magnesium sulphate (fifty per cent) by mouth or per rectum. In such cases, a subtemporal decompression may rarely be necessary, at which time the dura is found to be under great tension and the brain is pale and "tight."

Dehydration is not advocated in the treatment of acute head injury. Two thousand c.c. of fluids per day are given to each adult patient, either by mouth, hypoclysis or nasal tube feedings. We have seen not a few patients admitted after dehydration therapy with high fever, stupor, etc., who were relieved by an adequate fluid intake.

*The writer[3] has recently confirmed Sprong's observations in the experimental animal and in clinical cases.

The use of morphine is strictly interdicted in the treatment of head injuries.* This is also true in regard to any patient (after head injury or otherwise) with increased intracranial pressure, as shown by choked discs, drowsiness, etc. It contracts and fixes the pupils and renders them useless as localizing signs. It compromises the sensorium and one cannot tell in post-traumatic cases whether stupor is due to morphine or to a developing clot. It adversely affects respiration by direct medullary action when it (respiration) may be already considerably embarrassed from the effects of the trauma. We utilize the barbiturates, chloral hydrate and bromides per rectum and, in the quite restless patient, paraldehyde (one-half to one ounce) given per rectum or nasal tube.

EFFECTS OF ALCOHOL

The effects of alcohol should be disregarded almost entirely in the treatment of head injuries, as previously emphasized in a paper from this clinic.[6] It is much better to make diagnostic burr openings through the skull, if a clot is suspected, rather than passively to assume that a deep stupor is probably due to alcohol. Blood serum alcohol determinations are of real help in this regard. As now carried out in the laboratory of Dr. W. E. Bray, at the University of Virginia Hospital, 150 mgm. per cent of alcohol in the blood serum is accepted as the figure above which alcoholic intoxication is definite.

It is most important to elevate the head of every patient who has sustained a head injury with two exceptions: (a) if the patient is in shock (which is infrequent) and (b) if there is much mucus in the tracheobronchial tree, in which latter instance it is necessary to elevate the foot of the bed for one to two hours, place the patient on his abdomen with the face turned to one side, administer atropine (gr. 1/100) and remove the mucus with an aspirator, as advocated by Coleman.[7] This will frequently result in dramatic improvement of the patient in a few hours. An un-

*Rarely, morphine may be used with nice judgment, if one is convinced either by the clinical signs or by previous operation, that no post-traumatic surgical lesion is present.

conscious patient should be turned from one side to the other every two hours.

The value of the nasal tube should be more widely appreciated in the management of the unconscious or semiconscious patient.

Hyperthermia (temperature of 103° or more) is best treated by a complete alcohol sponge bath every hour, several ice bags about the head and neck, and removal of all clothing and bed clothes except one thin sheet overlying the patient.

3. OPERATIVE TREATMENT

Practically all the operations done in recent years in patients with head injury consist of (1) the elevation of compound or simple depressed fractures,* (2) diagnostic burr openings, (3) removal of acute sub- and extradural clots, usually by means of a subtemporal decompression (Table I). The prevention of post-traumatic epilepsy is probably much more dependent on the operative repair of a cortical laceration resulting in a minimum of gliosis and scarring, rather than to the actual elevation of the depressed bone fragments themselves.

Active cerebrospinal fluid leaks from the nose* (particularly if associated with an intracranial aerocele—*i. e.*, pneumocephalus —as demonstrated by x-ray examination), require almost immediate operation—if the patient's condition permits—with repair of the communication between the paranasal sinuses and the subarachnoid space with a fascial strip, or an overwhelming meningitis is very likely to result. It is best to keep the leaking ear uppermost to prevent the escape of too much cerebrospinal fluid.

The early repair—within four to six hours of their production if possible—of all scalp lacerations and compound depressed skull fractures is, certainly, one of the most important factors in the proper management of head injury cases; by this means only are severe, perhaps fatal, intracranial infections prevented. These lacerations are not repaired as soon as they should be, in many

*We prefer, as a rule, to wait two to three days before elevating a simple depressed fracture (unless pressure symptoms supervene) as our experience has shown that there is considerably less bleeding and difficulty in general when one waits until the patient is completely rational and the operation can be carried out under novocaine anesthesia. This does not apply, of course, to compound depressed fractures in which immediate operation is imperative, primarily to prevent intracranial infection.

*It is now our practice to administer sulfanilamide to all patients with definite cerebrospinal fluid leaks from the ear or nose until the leak stops spontaneously or until operative repair of the fistula has been accomplished.

TABLE I

STATISTICAL ANALYSIS OF ONE YEAR'S HEAD INJURY CASES*

(Unselected Routine Series)

Total Number of Patients	391	Male 310	Male ....79.3% of total
		Female 81	Female ...20.7% of total
Total Number of Patients in Shock on Admission (including border-line cases)	27		6.9% of all cases
Total Number of Patients Operated on (not including scalp lacerations)	42		10.7% of all patients were operated on

Resumé of Operations

(a) Compound or simple depressed fractures	31	
(b) Burr openings only	6	
(c) Acute clots (subdural or extradural)	5	
(d) Subtemporal decompression alone (without clot)	0	(to emphasize infrequency of this operation at the present time)
Total	42	

*The data in this and the three subsequent tables, were obtained from cases seen in 1934-1935, during the writer's term of service in the Department of Neurological Surgery at the Medical College of Virginia, Richmond.

cases, because it is apparently assumed that many of the patients are in shock. We now know that less than ten per cent of any large series of all types of head injury cases are in shock as determined principally by a blood pressure reading below 100 systolic in the adult, on admission to the hospital (Table I). The shock which occurs in this small percentage of patients is due to: (a) overwhelming brain injury with, perhaps, widely dilated fixed pupils, blood pouring from the cranial orifices, profound unconsciousness, etc., (b) severe blood loss from scalp lacerations or elsewhere and (c) severe associated injuries, such as a fracture of the pelvis, a crushing chest injury, etc. Even many of these individuals can be relieved of shock in a few minutes by intravenous saline solution or, on occasion, by a blood transfusion. Needless to state, if one is compelled to operate for the evacuation of a clot several days after the injury, through a field infected by improper management of scalp lacerations, a serious if not fatal intracranial infection is practically inevitable.

3. Statistics (with special reference to the significance and importance of shock and associated injuries).

An analysis of a consecutive unselected series of 391 patients with head injuries demonstrates that only 6.9 per cent of the entire group (with or without associated injuries) were in a state of clinical shock on admission; this figure also includes the borderline cases. Furthermore, the patients without associated injuries who were in shock on admission (regardless of the type of head injury) constituted only three per cent of the entire group. Of the 391 patients, 10.7 per cent (forty-two) were operated on (Tables I and II).

Lumbar puncture, as mentioned previously, was performed in 15.3 per cent (sixty) of all cases (Table II). The number of patients with skull fractures (by x-ray, by operation or clinically, *i. e.*, base)—was 31.7 per cent of the total, and 32.2 per cent of all cases had severe associated injuries which greatly complicated their management as the percentage of head injury cases with associated injuries that were in shock on admission was fifteen

TABLE II

TOTAL NUMBER OF HEAD INJURY PATIENTS: 391

Number of Patients on Whom Lumbar Puncture was Performed	60	15.3% of all cases
Number of Patients with Skull Fractures (by x-ray, by operation, or clinically [base])	124	31.7% of all cases
Number of Patients with Severe Associated Injuries*	126	32.2% of all cases
Total Number of Patients Who Died in Hospital	33	8.4% mortality (all cases)
Number of Patients with Associated Injuries Who Were in Shock on Admission (regardless of type of head injury)	19	15% of total number of patients with associated injuries were in shock on admission (two to three times the shock incidence of entire series, i. e., 6.9%)
Number of Patients Without Associated Injuries Who Were in Shock on Admission (regardless of type of head injury)	8	3.0% of those without associated injuries were in shock on admission.

i. e. Speaking generally, the patient with severe associated injury (regardless of the type of head injury) is five times more likely to be in shock than the patient without associated injury.

*Such as a fractured pelvis, spine, chest or abdominal injury, or a compound fracture of the femur, etc.

per cent, *i. e.*, two to three times the shock incidence of the entire series. It was concluded that the patient with a severe associated injury (regardless of the type of head injury) is five times more likely to be in shock than is the patient without associated injury.

The mortality of the entire series of 391 patients with all types of head injury was 8.4 per cent (Table II). A mortality rate of ten per cent or less should be the goal in the management of head injuries in general. Twenty-three and eight-tenths per cent of all cases operated upon for their head injury died (Table III) but this figure should be further analyzed with reference to associated injuries before it has real significance. Thus it is seen that of the patients who died postoperatively that did not have associated injuries, the mortality was 16.7 per cent, whereas 41.7 per cent of all patients died postoperatively that also had associated injuries. These comparative figures, in regard to postoperative mortality, demonstrate the enormous importance of associated injuries in increasing the mortality rate in all operations for head injury (two to three times as great) (Table III).

Of the 124 patients in the group who had a fracture of the skull (with or without associated injuries) seventeen per cent died with or without operation (Table III). Here again it is seen that if one take associated injuries into account, the mortality rate varies widely. For example, the mortality rate in the patients with skull fracture (all types) and no associated injuries was 12.6 per cent but it rose to 27 per cent in the group with all types of skull fracture and associated injuries (Table IV).

Recalling the mortality rate of the entire group (391 patients) with and without associated injuries (8.4 per cent), it is seen that this dropped to 6.8 per cent if the patients (all types of head injury) who also had associated injuries are eliminated (Table IV). However, if the head injury cases (all types)

TABLE III

TOTAL NUMBER OF HEAD INJURY PATIENTS: 391

Further Analysis of Mortality

(a) Of the entire series of head injury cases (391 patients)	33 patients died	8.4% of total number of cases.
(b) Patients who died postoperatively*	10	23.8% of all operated cases (42) died.
(c) Of the 124 patients with fracture of the skull (all types) with or without associated injuries	21 died with or without operation	17% of all patients with skull fractures died.

But: Ten of the twenty-one fractured skull cases that died also had associated injuries (see [d] infra), Table IV.

*(1) 5 patients who died postoperatively had no associated injuries. 30 patients of total number who were operated on (42) had no associated injuries	16.7% of patients who were operated on (head) without associated injuries died.
(2) 5 patients who died postoperatively had associated injuries. 12 patients of total number who were operated on (42) had associated injuries	41.7% of patients who were operated on (head) with associated injuries died.

(demonstrating the importance of associated injuries in increasing the mortality rate in all operations for head injury [two or three times as great.])

with associated injuries are analyzed, the mortality rate is twelve per cent (Table IV). All these analyses demonstrate the importance of associated injuries in increasing the mortality rate regardless of the type of head injury. It is possible to state, from this statistical survey, that a patient (regardless of the type of head injury) with no severe associated injury has practically twice as good a chance of recovery as does a similar patient who also has a severe associated injury.

4. COMPLICATIONS OF HEAD INJURY

Preoperative lumbar puncture, in cases of chronic subdural hematoma, may show a normal or low spinal fluid pressure because the total intracranial volume (brain and clot) may be less than in a normal brain, so great is the cerebral condensation in many cases. When patients with chronic subdural hematoma die postoperatively, it is not due to increased intracranial pressure but to cerebral hypotension, or, more specifically, to failure

TABLE IV

17% OF ALL PATIENTS WITH FRACTURE OF SKULL DIED, WITH OR WITHOUT ASSOCIATED INJURIES

(d) Number of patients with fracture of skull (all types) without associated injuries..	87	
Number of patients with fracture of skull (all types) without associated injuries who died.....	11	(12.6%)

i. e. Only 12.6% of (d) group died (compared with 17%: total fracture mortality with or without associated injuries).

(e) On the other hand:		
Number of patients with fracture of skull (all types) with associated injuries..	37	
Number of patients with fracture of skull (all types) with associated injuries who died.....	10	(27%)

i. e. 27% of (e) group died (compared with 17%: total skull fracture mortality with or without associated injury and with 12.6% mortality of fractured skull cases without associated injury).

(d) and (e) demonstrate the necessity of analyzing the mortality rate of patients with fracture of skull (or, for that matter, head injury cases of all types) with reference to the presence or absence of associated injuries, or they have little significance).

(f) (Ignoring, for the moment, the type of head injury entirely)	
Number of patients with all types of head injury with severe associated injuries.....126	(32.2% of entire series of head injury cases)
Number of patients with all types of head injury with severe associated injuries who died..... 15	12% mortality* (approximately the same mortality rate as patients with fracture of the skull without associated injury) see (d)

i. e. 12% of all types of head injury cases, that also had associated injuries died; compare with total mortality of head injury cases (with or without associated injuries) of 8.4%.
Again demonstrating the importance of associated injuries in increasing the mortality rate, regardless of type of head injury.

*Mortality of patients with all types of head injury without severe associated injuries.....6.8%
i. e. A patient (regardless of type of head injury) with no associated injury has practically twice as good a chance of recovery as does a similar patient who also has a severe associated injury.

of the greatly condensed brain to re-expand after the removal of the clot. Chronic subdural hematoma may occur in children and even in infants; we have recently had an example of this type of lesion (described in section five, case B, infra).

Bullet wounds of the brain require immediate debridement of the bullet tract and removal of the bullet if possible, although a too radical attempt at extraction of foreign bodies lying deeply in the brain is to be condemned, as emphasized by Horrax.[8] A patient who, after a bullet wound of the brain, is immediately and profoundly unconscious, with irregular respiration and other signs of pontomedullary involvement, is usually beyond the help of surgery.

TRAUMA OF CERVICAL SPINE

Attention should be directed to the frequency with which trauma of the cervical spine occurs in a patient with a combined head-shoulder girdle injury.* In an unconscious patient, the rigidity of a broken neck may be erroneously attributed to blood in the subarachnoid space from the head injury. A force which is capable of simultaneously injuring the head and a shoulder can readily produce concomitant cervical spine injury which, if undetected at the time of trauma, may eventually prove to be by far the most important part of the entire injury. We now routinely examine the cervical spine (x-ray) in all patients with a head injury and trauma of the shoulder girdle (clavicle, scapula, acromioclavicular separation, etc.). It is important that five views of the cervical spine be taken: (1) A-P, (2) lateral, (3) right oblique, (4) left oblique, (5) view through the open mouth to demonstrate the atlas-axis relationship and the odontoid process; this technique is invariably followed in our clinic.

We wish to emphasize particularly, in considering complications, the prevention of the most important one; namely, the development of any one or more of the various forms of post-traumatic intracranial infection. From the standpoint of numbers alone, this is far more important than the recognition and removal of the occasional extradural or subdural hematoma. Such infections are further of great importance because they are, in many instances, entirely preventable. We have been interested in learning why this is so, particularly as we are rarely, in our surgical out-patient department, without a number of cases of this type that come to the hospital a few days or more after a head injury with severe scalp infections, osteomyelitis of the skull, extra- or subdural abscess, meningitis or brain abscess; many of these patients had received treatment before being seen by us. We have concluded that the most common cause of this state of affairs is that not a few physicians still believe that patients with concussion or more severe brain injuries are in shock for an indefinite period of time after trauma and that therefore nothing had better be done for one or two days until one is certain that the patient is free from shock. From our statistical survey, we know this is not the case. Several analyses of large numbers of all types of head injury cases in our clinic have invariably shown the shock incidence on admission to be definitely less than ten per cent.[6]

To refer to only a few of a large number of similar cases seen by us in the last three years (practically all preventable):

SIX PREVENTABLE CASES

(1) A sixty-two year old white man was admitted twelve days after an accident in which he sustained an extensive scalp laceration. This originally had been sutured without adequate debridement and a very foul extensive scalp infection resulted. Several operations were necessary to drain the dissecting lake of pus beneath the galea; all the galea eventually sloughed away. A corona of twelve Dakin's tubes was necessary for weeks with hourly irrigations and skin grafts before recovery occurred. This patient suffered grave danger of osteomyelitis, meningitis, etc., not to mention threat to life itself, prolonged hospitalization, and large expense from a preventable infection.

*This combination of injuries (designated as Coleman's syndrome) has already been described, together with a number of illustrative cases, in a previous paper: Am. J. Surgery (in press) with Dr. Everett Grantham.

(2) A five year old white girl was admitted three years after an infected hematoma over the occiput had produced an osteomyelitis requiring several operations by us which were especially precarious as the infection was situated over the cerebellum and there was great danger of opening the occipital venous sinus and also of inadvertently penetrating the dura with resultant meningitis. Eventually it was necessary to sacrifice all the occipital bone from mastoid to mastoid before recovery took place. Hematomas of the scalp should be promptly incised and drained within two or three days after they occur, if a tight pressure bandage does not eliminate them by that time.

(3) A thirty-four year old white woman was admitted to the hospital two months after she was struck in the head with an pick-axe during a family altercation. There was extensive osteomyelitis of the entire left side of the skull, the frontal sinuses were widely opened and the dura was also lacerated for several centimeters beneath the osteomyelitic bone. It is practically impossible to state why this patient had not promptly developed an overwhelming brain infection. Removal of approximately one-third of the cranium was necessary before complete healing could be accomplished over the course of a year or more. If operation had been carried out within four to six hours of the injury, primary healing of this wound would almost certainly have occurred.

(4) A ten year old colored boy was admitted to the hospital five weeks after he was bitten in the scalp by his opponent in a wrestling match. The scalp had drained pus ever since, several incisions having been made in the interim through the scalp only to facilitate drainage. The whole of the vertex of the skull was "moth-eaten" (x-ray examination) due to a staphylococcic, streptococcic and B. coli osteomyelitis. Almost the entire vertex of the skull was sacrificed at operation and the superior longitudinal sinus was widely exposed. A large celluloid plate was inserted nine months later to restore the contour of the skull. The human or animal bite is especially capable of producing early virulent infections and it behooves us to pay particular attention to their prompt and complete debridement, wherever in the body they may occur.

(5) A thirty-seven year old white woman* was admitted to the hospital three weeks after an automobile accident. At the time of injury, a left frontal scalp laceration had been approximated with skin clips without debridement. Infection of the wound developed and convulsions supervened although there had been no skull fracture. Several operations revealed an extensive subcortical multilocular abscess of the left cerebral hemisphere and the patient eventually succumbed as the lesion could not be adequately drained. Although the abscess was due to a streptococcal infection, sulfanilamide was not available at that time. Infection had extended through the intact skull to the brain from a preventable scalp infection.

(6)* A nineteen year old white boy was admitted to the hospital three days after he was injured in the left frontal region with a sickle, wielded by an assailant. He had gone to a physician the day of the injury but the patient was at fault in not telling the physician the nature of the accident. A simple dressing was applied and when seen by us, three days later, an extensive cellulitis of the overlying scalp, meningitis with high fever, stupor, and a probable brain abscess were already present. Sulfanilamide was administered orally and hot saline compresses were placed over the laceration which was also draining cerebrospinal fluid from which streptococcic were cultured. Three and one-half weeks later, the depressed fracture (demonstrated by x-ray examination) underlying the scalp wound (*i. e.*, a compound fracture) was operated upon, a subcortical abscess drained and the patient eventually recovered after several months' disability. The lessons of this case are: (1) One should never treat a laceration of the scalp without being certain that the underlying skull is intact either by direct inspection and palpation or by x-ray examination, or both, (2) immediate and thorough debridement of all scalp lacerations down to the skull and complete closure of the wound without drainage is imperative. Compound depressed skull fractures should rarely be drained (particularly does this apply to the brain itself).

Prevention of infection in acute head injuries is accomplished mainly by the (1) early and thorough debridement and closure with-

*The writer is greatly indebted to Dr. C. C. Coleman for permission to report this case seen on his service at the Medical College of Virginia, Richmond, in 1936.

*These six cases (together with an additional one of overwhelming brain infection) illustrative of the serious if not disastrous effects of post-traumatic intracranial infection, are presented in greater detail in a paper dealing exclusively with this problem. (Virginia Medical Monthly, Vol. 67, pp. 345-56, June, 1940).

out drainage of all scalp lacerations and compound depressed skull fractures, (2) by prompt evacuation of hematomas of the scalp, (3) by early and complete repair of wounds due to bullets or other foreign bodies and (4) by the intelligent management of cerebrospinal fluid leaks through the cranial orifices. If the patient delay his appearance for treatment one or two days after the injury, he is, of course, himself at fault but unless the profession fully realize the low incidence of shock in acute head injuries and is more fully aware of the grave complications that may readily develop, scalp lacerations and other open wounds of the head will not be treated promptly, within a very few hours of the injury, with a resultant high percentage of scalp infections, osteomyelitis, meningitis and serious or fatal brain infections.

5. Finally, four unusual head injury cases seen within the last three years at the University of Virginia Hospital are briefly presented. Patients such as these furnish sufficient stimulation to keep our interest in head trauma always keen and alert.

CASE REPORTS

A. Acute Subdural Subtentorial Hematoma: A seventeen year old white boy was admitted directly after injury in an automobile accident, apparently moribund, with periods of opisthotonos and marked flaccidity of the extremities. There was a large amount of white matter oozing from the right ear which, on microscopic examination, closely resembled cerebellar tissue. Fifty c.c. of fifty per cent sucrose were administered intravenously by the resident surgeon (Dr. Robert McCullough) with marked improvement in respiration.

Because of the marked respiratory difficulty, the extreme hypotonia (always suggestive of cerebellar involvement) and the cerebellar tissue (?) escaping from the right ear, together with the absence of localizing signs in the pupils and extremities, a subdural clot over the right cerebellar hemisphere was suspected and suboccipital exploration (the day following admission) disclosed such a lesion. The patient improved thereafter until respiratory complications (lung abscesses) ensued; he died sixteen days after the injury. Postmortem examination showed no residual clots in the posterior fossa. Had the lung complications not developed (in spite of nasal tube feedings and postural drainage), the patient would probably have recovered, as he was greatly improved at the time they supervened eight days after operation. More frequent resort should be had to cerebellar exploration in cases of acute head injury with unconsciousness, especially if marked hypotonia of the extremities be present, together with shallow irregular breathing (medullary compression) and absence of localizing signs in the (1) pupils, (2) reflexes, and (3) motor power of the extremities.

B. Chronic Bilateral Subdural Clots in a Four Months' Old Infant With a Greatly Enlarged Head That Appeared Typical of Congenital Hydrocephalus: This child, a white girl, was first seen at the age of two months when the head was already definitely enlarged; in fact, the obstetrician had observed this at the time of the mother's delivery. When the anterior fontanelle was tapped in performing the dye test (made to determine the type of hydrocephalus), no clear ventricular fluid was encountered. Instead, quite bloody fluid was obtained from each lateral angle of the anterior fontanelle; this fluid contained no tumor cells; only blood cells were present. Bilateral superior temporal burr openings disclosed two enormous liquid subdural clots which were evacuated. The brain was small and collapsed at the base of the skull. The patient made a good postoperative recovery.

Peet and Kahn[9] have emphasized that infants with chronic subdural hematomas who appear to have congenital hydrocephalus usually have a greater prominence of the parietal bosses than do true hydrocephalics. They also noted that, when a clot is present, percussion over the parietal region produces a dull note whereas, in hydrocephalus, a tympanitic note is heard. Furthermore, as in our patient, subdural clots in infants almost invariably occur in those who are malnourished; rarely are they encountered in the breast-fed child. Needless to state, the prognosis in this patient is infinitely better than in the average case of marked congenital hydrocephalus, such as it certainly resembled when first seen.

C. Post-traumatic Massive Right Ventricular Hemorrhage Probably From a Congenital Angioma in or Contiguous to the Right Lateral Ventricle, with Postoperative Recovery: A nine year old white girl was admitted three days after a mild concussion of the brain in a stuporous state of twenty-four hours' duration. The pulse was 64/M,

and there was complete paralysis of the left arm and leg. Several small port wine naevi were present in the skin of the left shoulder. Posterior parietal burr openings were made preliminary to a ventriculogram, a right-sided brain tumor being suspected as well as a possible post-traumatic lesion. The left lateral ventricle was tapped and clear fluid obtained. A ventriculogram showed a shift to the left but no air in the right ventricle. The right ventricle was then tapped and very bloody fluid obtained with a red blood cell count of 1,930,000 per cu. mm.; this was repeated in four hours. A lumbar puncture was done four days later and slightly xanthochromic fluid obtained. The patient must have had a massive right ventricular hemorrhage incident to rupture of a vessel in an angioma in or contiguous to that ventricle. The hemorrhage must have coagulated at the right foramen of Monro as the left ventricle (first tapped) showed clear fluid, the ventriculogram following the introduction of air into the left lateral ventricle demonstrated only the left lateral and the third ventricles and, furthermore, lumbar puncture performed at her home a few hours after her collapse (about four days before the ventriculogram) showed only a few red blood cells in the spinal fluid, which was grossly clear. The fact that the blood clotted at the right foramen of Monro, preventing an extensive hemorrhage throughout the entire ventricular system, probably had as much to do with her recovery as anything else, for an immediate massive hemorrhage involving all the ventricles of the brain is almost invariably fatal. The congenital vascular naevi in the skin of the left shoulder suggest a similar lesion in the brain as the source of the hemorrhage. Cushing and Bailey[10] have recorded similar lesions in their masterly monograph on blood vessel tumors of the brain. Occasionally, a ventricular tumor such as a papilloma will first manifest itself by intraventricular hemorrhage, post-traumatically or even spontaneously.

D.* Complete Transverse Fissure Fracture of the Middle Cranial Fossa, Resulting in a Bilateral Bell's Palsy, Each Seventh Nerve Involvement Coming on at Different Periods After the Head Injury, Each Time Associated With a Cerebrospinal Fluid Leak from the Opposite Ear. Eventual Complete Spontaneous Recovery Occurred: This eighteen year old white boy was admitted two days after a head injury. On admission, there was a cerebrospinal fluid leak from the left ear and a complete Bell's palsy and an abducens palsy on the right side. A linear fracture of the left temporal bone was demonstrated by x-ray examination. Three days after injury, a complete left Bell's palsy developed for the first time together with a cerebrospinal fluid leak from the right ear. No definite signs of extradural hemorrhage developed although the patient was rather drowsy for several days, the pulse was slow (50/M), and the left pupil was somewhat dilated compared with that on the right side.

It was concluded that the right Bell's palsy, present on admission, was due to direct injury to the seventh nerve although the cerebrospinal fluid leak was on the left side. The Bell's palsy on the left, developing for the first time on the third day after injury, was attributed to edema of the left seventh nerve (the development of the latter palsy was associated with a cerebrospinal fluid leak from the right ear which also occurred for the first time on the third day after injury). It was predicted that the Bell's palsy on the left (the one that occurred later) would be the first to improve and such was the case. At the time of the bilateral Bell's palsies, the patient presented a completely mask-like expression, being unable to close either eye, to elevate either angle of the mouth or to wrinkle the forehead. It was thought that a seventh to twelfth cranial nerve anastomosis on the right side would possibly be necessary, as advocated by Coleman,[11] if recovery did not occur in a few months. Happily, this was not required as spontaneous improvement was quite satisfactory. This case is unique in our experience, and, to the best of our knowledge, in medical literature as well.

SUMMARY AND CONCLUSIONS

1. The state of consciousness is the most important single factor in evaluating the status of any patient with an acute head injury. X-ray examination of the skull in all patients rendered unconscious is imperative and all such patients must be hospitalized, at least overnight. Direct palpation and inspection of the underlying skull in all lacerations of the scalp is very important in order to eliminate or establish the presence of a compound depressed fracture.

*These four cases are recorded (with an additional one of delayed extradural hemorrhage, described earlier in this paper) in greater detail in another paper having to do with instances of unusual head injury seen in this clinic; now in press (So. M. J.).

2. Lumbar puncture is necessary only in about fifteen per cent of head injury patients. Dehydration is of little value in the management of acute head injuries. Morphine is strictly interdicted except in the occasional patient that presents no surgical lesion and remains quite restless under milder sedation. Alcohol should be disregarded in head injury cases as a factor in the patient's condition, unless blood alcohol studies are made. The head should be elevated in every patient with head trauma unless (1) he is in shock (rare) or (2) much mucus is present in the tracheobronchial tree. Sulfanilamide is of great value in every patient with a cerebrospinal fluid leak from the cranial orifices. Nasal tube feedings should be more widely used in any unconscious or semiconscious patient, post-traumatic or otherwise. Hyperthermia should be promptly and vigorously combatted.

Operations in head injury cases include those for elevation of depressed skull fractures, diagnostic burr openings and evacuation of clots. Subtemporal decompression *per se* is rarely performed today. An occasional repair of a cerebrospinal fluid leak through the nose with an intracranial aerocele is required. An increasing stupor, with signs of increased intracranial pressure, chiefly slowing of the pulse and respiration, together with the advent of localizing signs in the extremities and pupils calls for operative intervention.

3. A statistical survey is presented with special reference to the low incidence of shock in patients with acute head injuries (6.9 per cent) and the importance of associated injuries in evaluating shock incidence and the mortality rate (with or without operation).

4. Complications of head injury are discussed. Examination of the cervical spine in combined head and shoulder-girdle injury is emphasized. Certain aspects of chronic subdural hematoma are considered. It is particularly stressed that many cases of post-traumatic infection after head injury are preventable and are due, in part, to the still prevalent erroneous impression that most patients with an acute head injury are in shock, and treatment, therefore, is unduly delayed, in many cases. Six illustrative cases are cited to demonstrate this point.

5. Four quite unusual cases of head injury are briefly described for their general interest and for the stimulating effect they may have on the management of head injuries as a whole.

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Potassium Salts and Hay Fever

Potassium salts have no practical value in the treatment of hay fever and seasonal asthma, Simon S. Rubin, M.D., Abe L. Aaronson, M.D., Morris A. Kaplan, M.D., and Samuel M. Feinberg, M.D., Chicago, report in *The Journal of the American Medical Association* for June 15.

"The effect of such salts in other allergic conditions is highly questionable," the Chicago workers state. "Reports of treatment results in hay fever should be received with skepticism unless they bear the earmarks of evaluation by methods based on the relationship of the symptoms to daily, seasonal and geographic fluctuation of the pollen counts."

PYELITIS OF PREGNANCY

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In order to treat pyelitis of pregnancy properly we must have a fundamental knowledge of the physiological changes occurring in the genitourinary tract of the female during gestation. Not until we have such facts in mind are we able to appreciate the influence they exert when the exciting cause is present. In previous years, most investigators of the subject believed stasis was due to the mechanical pressure of an enlarged uterus upon the ureters. However, this does not tell the whole story. There have been observed by many workers a widening, looping and lengthening of the ureters, probably due to a substance called relaxin found in the early months of gestation. Apparently the entire smooth musculature of the body is involved. One investigator observed a narrowing of the ureter at the brim of the pelvis as a result of the downward displacement of the bladder. Another found that the ureters angulate as they enter the bladder and compensatory dilatation occurs. Edema of the ureters and strangulation by the enlarged uterine arteries has been studied by many. Hofbauer[1] in his investigation of the subject, found a general hypertrophy and hyperplasia of the entire genital tract, with the same process also manifest in the lower ends of the ureters, producing a physiological hydronephrosis. Brakeman[2] believes that most of the changes of the ureter during pregnancy are in the middle one-third. In this region there are fewer supporting structures, and a growing uterus exerts its pressure more fully in that area with a resulting dilation at the upper part of the ureter. Needless to say, whatever finding we accept, all are physiological to the normal pregnant female, and produce a stasis of urine as an end result, which favors the development of infection.

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It has been found that stasis of urine begins in the early months of pregnancy, and continues to increase throughout the course until the child is delivered. However, this retention or stasis in the upper ureter must not be regarded as a pyelitis because 100 per cent of pregnant women have this condition, and only 12 per cent develop pyelitis. We can then state that stasis plus the existing etiological cause produced the disease. The nature of the exciting agent is not always obvious, and is, therefore, extremely difficult to eradicate. It is without a doubt, for instance, that pyelitis of pregnancy is sometimes due to a relighting of an infection which had remained latent for a long period prior to gestation. In a prophylactic sense, such a condition can be reduced by the proper care of kidney infections in childhood. Foci of infection anywhere in the body should be eradicated. A number of observers have demonstrated that during the second half of pregnancy a marked lowering of resistance of the body to infection occurs, and measures to increase resistance should be employed. Curtis[3] states that the virulence of intestinal bacteria is greater in pregnancy and they easily find their way to the kidneys.

In pyelitis of pregnancy the colon bacillus is the most common organism and is spread by means of lymph, blood, and urine, in the latter route bacteria entering directly up the

urethra into the bladder. The infection can manifest itself at any time during pregnancy, but is most commonly seen from the fourth or fifth month onward. Laws[4] states that more than 30 per cent of patients who come to the gynecological service complain of urinary symptoms. Most of these women will be pregnant, and in view of this, it is of utmost importance that the gynecologist diagnose these cases correctly, and institute proper treatment. Otherwise, a pyelitis is most certain to develop during gestation when the resistance of the urinary tract is lowered.

The clinical picture varies from one showing no symptoms to one showing violent pains, high fever and all the signs and symptoms of toxicity. The disease may produce vague non-localizing symptoms, and a differential diagnosis must be made to exclude malaria, appendicitis, salpingitis, etc. A benign infection of the pelvis may become severe. DeLee states that in two-thirds of the women dying in pregnancy, pyelitis was found. Faith Fetterman,[5] in a study of pain, demonstrated that pathology of the upper ureter may produce symptoms simulating a gastrointestinal disturbance and manifested by pain about the distribution of the lateral cutaneous nerves; that disease of the middle portion of the ureters may cause pain in the distribution of the lumbar nerves over the vulva and the front of the thigh, and that the disease of the lower one-third of the ureter may simulate a sciatica. This work was accomplished by manipulating the ureters at different levels. Further proof was obtained by removing disease processes of these organs with consequent relief of symptoms in definite areas of the body.

POSTURAL TREATMENT

The mild cases of pyelitis can, in most instances, be easily cured by adequate rest, large intakes of water, plus an alkali. The more advanced cases should have the same treatment at first. Should the symptoms not subside within a reasonable length of time other procedures must be employed. Postural treatment helps a large number of these cases. A small pillow is placed under the back in the lumbar region. This relieves the kink in the ureters if present, and permits more adequate drainage. Methenamine with a decreased fluid intake has been found very desirable in many cases. C. D. Burford[6] uses 45 to 60 grains of ammonium mandelate daily with ammonium chloride to produce acidity of the urine. He advocates such medication only in non-toxic cases. Sulfanilamide has given excellent results with no impairment to the health of the child. Doses of 60 grains daily are given, later reduced to 45 grains. However, the patient must be carefully watched for symptoms of drug toxicity. E. N. Cook[7] of the Mayo Clinic has successfully employed neoprontosil intramuscularly and by mouth without any signs of drug toxicity.

USE OF URETERAL CATHETERS

By following the above regimé most cases will clear up. Should they fail, the urologist must be consulted. At this stage of the disease the problem is that of adequtae drainage, which can, in most instances, be accomplished by the use of ureteral catheters. If the condition continues to be stubborn, then nephrectomy or nephrotomy are the methods of choice. The catheters are universally employed, but their usage varies in the hands of different men. Some prefer to wash out the pelvis and remove the instrument immediately, while others retain the catheters from hours to weeks. However, when the catheters are retained too long, there is a possibility of a foreign body reaction, but according to Geisinger[8] this has been considerably exaggerated, and the method of choice depends upon the condition and the reaction of the patient. Stander[9] states that irrigation of the kidney pelvis with a silver nitrate solution in a dilution of one to one thousand will often relieve the condition. Others prefer to leave the catheters in situ for twenty-four hours, and irrigate the pelvis with a silver nitrate solution.

Even with adequate drainage, other measures must be employed for an uneventful out-

come. An adequate diet must be given, the bowels must be kept open, and water must be forced to the limit. Blood transfusions, in repeated small quantities, have in many cases proven life-saving.

In conclusion, periodic urine analysis should be done throughout pregnancy so that a case of pyelitis can be detected at an early stage when simple conservative therapeutics can be employed rather than the radical and painful procedures necessary in a case diagnosed late.

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TRENDS IN AMERICAN OBSTETRICS IN THE LAST DECADE

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THE last decade has been an important one in the health annals of America. Great advances in diagnosis and treatment in almost every field have been paralleled, in most instances, by increasing emphasis on preventive aspects and by extension of public health services and facilities, so that today, America has a lower general death rate than ever before, the average American has better health than he has ever enjoyed, and his life expectancy is considerably higher than it was a decade ago. This has been nowhere better reflected than in the field of obstetrics, where the drop in maternal and fetal mortality has been especially noteworthy.

In 1930 there were 14,836 deaths from puerperal causes. In 1938, which is the last year for which complete figures are available, there were 9,953 deaths under the same heading. Despite the fact that there was some decrease in the birth rate, it is possible to approximate the saving of life in the last decade by subtracting the number of deaths in each year since 1930 from the number for that year, and while the figures are not yet complete, it may be estimated that the lives of at least 25,000 American women were saved during this period because of improvements in maternal care. The greatest decline, it must be noted, has occurred in the last few years.

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Less information is available with regard to obstetric morbidity, except to say that there is unquestionably less invalidism than formerly, from both the medical and surgical viewpoints. Fetal morbidity and mortality, too, since they inevitably reflect the quality of maternal care, have shown a corresponding decrease in the last ten year period.

This achievement is neither fortuitous nor accidental. It is due to education, study, analysis, and concerted effort on the part of all those concerned with the problem of making childbirth safer. The optimism of these

opening paragraphs should not be construed to mean that the goal has been accomplished. The ultimate aim, that of reducing maternal deaths to the irreducible minimum, can only be visualized when every mother in the land is cared for under ideal obstetrical conditions. It is really only in the last decade that we have begun to learn something about the essential qualities of the ideal; the next and greater task will involve a diligent effort to apply the things we have learned on a nation-wide basis.

It is the purpose of this paper to consider some of the things which are, in the aggregate, pointing the way to this salvage of life and health.

EDUCATION

Education has unquestionably been of vital importance in the crusade against deaths from childbearing. The public has been made aware of the dangers of neglect in the prenatal period, and the profession through the county medical societies, has adopted educational programs which acquaint the public with these dangers, urging patients to consult qualified physicians early in pregnancy. Federal, state, and private agencies have been attacking on this front in a determined manner, both in stressing the necessity for adequate prenatal care and in helping to make it available where it has hitherto been most lacking. As a result there has been a decrease in maternal death, especially from toxemia, and a greater saving of life may be confidently anticipated as this work progresses. Because of widespread instruction in mothercraft more women than ever before are beginning to learn what constitutes good obstetric care, and this is essential to any long range program.

The phenomenal increase in hospitalization of obstetric patients has brought with it new problems of education. There are still very few good maternity hospitals, far too few, in fact. The task of the general hospital, that of making its obstetrical department completely safe as well as comfortable for the woman who comes there to have her baby, is being accomplished slowly and only with considerable effort and expense. The public has not been slow to realize that a good hospital, properly staffed and equipped, is the safest place for a woman to have her baby. In large urban centers, where hospitalization of obstetric patients has undergone the most rapid increase, where from 85 to 90 per cent of all births may occur in hospitals, there has been a steady accompanying decline in the puerperal and obstetrical death rates; in some cities the latter has dropped to what is regarded as almost the minimum. We may hope that safe and adequate hospital facilities will some day become available to every parturient, but this is as yet a dream. For the moment, the essential problem is the education and training of personnel. A good start has been made in this direction.

With increasing emphasis on better maternal care, our medical schools have improved and extended the scope of undergraduate teaching in obstetrics. In the interne period, ever increasing hospitalization has given young graduates the opportunity of seeing and working with larger volumes of obstetric material than was heretofore possible. Similarly, a greater number of men are able to qualify themselves as specialists than before, while of equal importance has been the special training of nurses, particularly in the larger maternity hospitals, to act as teachers and supervisors in other institutions.

Another highly commendable effort has been the establishment of short review courses in obstetrics for the practitioner. These are sponsored principally by state and federal funds and are being given by recognized authorities and teachers. They are now a part of the maternal welfare program of nearly every state.

Finally, it would seem apparent that information on the control of conception, with its promise of more rational child-spacing, and as a hope for eliminating poor pregnancy risks, should be considered an important aspect of the educational program. Maternal

and fetal mortality is much higher among women who have borne children in rapid succession than among those who have allowed at least two years to elapse between pregnancies.

CONTROL OF HEMORRHAGE, SHOCK AND INFECTION

The development of modern, easily manipulated apparatus for giving blood transfusion has been a noteworthy innovation. To be able to give blood rapidly, repeatedly, and with little trouble and expense, has made a difference in our maternal mortality, for when shock, hemorrhage, or infection complicate the obstetric picture, the value of this life-saving agency is inestimable. In placenta prævia, in premature separation of the placenta, following postpartum or postabortal hemorrhage; in obstetric shock; following rupture of the uterus or inversion; in various concomitant diseases, and in anemias of pregnancy in general, readily available blood has been a tremendous boon to the obstetrician.

The availability of safe physiologic and concentrated solutions, especially of dextrose, for intravenous use in various obstetric complications, notably in the toxemias, in exhaustion and shock, and precursory to transfusion, is also a part of the history of the present decade.

Hemorrhage deaths, already on the wane as the result of increased hospitalization, have become even more rare since the introduction in 1934 by Dudley and Moir, of a new, pure principle of an ergot base to which the Council of Pharmacy has given the name "ergonovinine." It is the most powerful oxytocic we have, and is rapidly becoming an important auxiliary in the armamentarium against hemorrhage.

The introduction of sulfanilamide and its related compounds is effecting a great saving of life and health in obstetrics. Brought to the attention of the English speaking world by Colebrook in 1936, it was originally advocated for the treatment of puerperal fever due to the streptococcus hemolyticus beta. Generally it has reduced the mortality from sepsis by about two-thirds. Transfusion, however, retains its importance in the treatment of puerperal infection. It must be emphasized that careful bacteriologic study must precede the use of this powerful drug; its empiric use for all types of infection is to be deprecated.

Sulfanilamide has also shown itself to be effective against pyelitis of pregnancy due to the bacillus coli. Most often this is the causative organism and, since the disease usually responds quite rapidly to even relatively small doses, the accoucheur has a new weapon for a complication which is potentially associated with the most troublesome consequences. Here too, exact bacteriologic diagnosis is essential, and expert urologic treatment may be required when the disease does not respond to the usual measures. Blood transfusion may again be indicated, since secondary anemia develops quite frequently in this condition.

IMPROVEMENTS IN CARE

One deplorable consequence of augmenting our hospital facilities for obstetric patients was, for a time at least, a remarkable increase in unnecessary operative interference. Cesarean section, version, mid-forceps, high forceps, and accouchement force were much abused, especially in less well regulated institutions. The inevitable result was an increase in morbidity and mortality, with corresponding elevations in the stillborn and neonatal death rates. The ever increasing demand for obliterative analgesia, influenced by unwise lay publicity, only added to this unwarranted operative interference. In all, the resultant harm nullified to a large extent the saving of life over this period which came about through the evolution of better techniques for dealing with such emergencies as ablatio placenta, placenta prævia, shock, hemorrhage, ruptured uterus, lacerations of the birth canal, etc., in the hospital.

In the early days of this decade, however, the pendulum began to swing the other way, and some measure of conservatism was reintroduced into obstetrical practice. This was

due in part, at least, to the work of special study groups, notably the one sponsored by the New York Academy of Medicine, and to the organization in many of our larger cities of similar groups of obstetricians for the purpose of study and collaboration on the problem of maternal mortality. This is not to say that there does not still exist a tendency to unwarranted interference, but one can at least believe that elective and quasi-elective version, forceful dilatation of the cervix and high forceps operations, are becoming more and more uncommon in obstetric practice, with consequent improvement in morbidity and mortality figures.

The indications for cesarean section have become generally broader, because this operation is being more frequently performed for such conditions as placenta prævia and preeclamptic toxemia, but section for eclampsia is being done far less often in most good clinics, since it has been learned that the mortality when section is employed is almost twice as high as when conservative measures are used. The last decade has also witnessed a remarkable swing from the older classical operation to low section. The latter is certainly a safer procedure following even short trials of labor or rupture of the membranes. Latzko and other extraperitoneal sections are being performed in a limited number of clinics in the presence of actual or potential infection, but they are technically difficult procedures; Porro section is being done more often in grossly infected cases.

PELVIC ROENTGENOMETRY

One of the most important advancements in obstetric knowledge relates to the improved status of pelvic röentgenometry. This work received great impetus in the last decade as a result of the studies of Thoms, Caldwell and Moloy, and others. Newer and more satisfactory morphologic classifications of pelvic types and abnormalities have been postulated, and radiographic observations on the mechanism of labor, particularly as it is related to various types of pelvic architecture have been made, which have in many instances rendered our former viewpoints untenable. From this work certain fundamental principles regarding optimum methods of delivery have been demonstrated. Its importance cannot be estimated so soon, but its revolutionary influence on obstetrics is becoming apparent to all.

In a recent article on pelvic dystocia, Beck says, "The results of these röentgenographic studies are so promising that an extension of their use to every sizeable community in the country may be predicted. * * * It is to be hoped that every woman will have the size of her pelvis determined by means of röentgenography before she is married or when she becomes pregnant, just as she is having a premarital or prenatal Wassermann test. * * * When this is done, all cases of contracted pelvis will have sufficient warning * * * to lead them to seek the services of a well-trained obstetrician for their confinement." Conversely, many women will, by such methods, be spared cesarean section.

LOW OR OUTLET FORCEPS

Whether the practice of delivering women, especially primiparas, by elective low or outlet forceps with episiotomy, should be considered true operative interference, is in my opinion, only of academic interest. A great deal depends on the institution and the individual operator, and the care which the patient has received during labor. Modern methods of analgesia often render the patient incapable for spontaneous delivery; in still other cases spontaneous delivery can only be accomplished at considerable risk to good asepsis, so that delivery by outlet forceps becomes not only necessary, but desirable. Whatever the arguments pro and con, the fact remains that more and more women are being delivered in this manner. It would seem, therefore, that the practitioner doing obstetrics under modern conditions should at least be adequately capable of performing the low or outlet forceps operation. It should be re-emphasized, however, that difficult mid-forceps, high forceps, version, section, craniotomy, and perhaps breech extraction in the primipara, are major obstetric procedures,

and should be performed only by qualified operators.

To relieve the discomfort of childbirth to such a degree as is consistent with the safety of both mother and infant is now a generally accepted principle in obstetrical practice throughout the land. Although the ideal drug, or combination of drugs, which best serves this purpose has probably not yet been found, modern analgesic techniques are on the whole better and safer than some of the older ones. In the last few years paraldehyde, for example, has earned imposing recognition in many areas as a safe, effective amnesic. Ethylene and cyclopropane are newer agents which are being widely used in obstetric analgesia and anesthesia, but ether is still the anesthetic of choice where relaxation is a primary consideration. The use of local anesthesia has opened up entirely new vistas for safely relieving pain at delivery. In cesarean section, especially when severe toxemia is concerned, it is often a life-saving measure.

One must also mention improvements in methods of dealing with fetal asphyxia, both from the prophylactic and active standpoint. Intratracheal insufflation, with or without mechanical devices, has unquestionably saved the lives of many asphyxiated infants, whether from labor or from analgesia.

MISCELLANEOUS FACTORS

In our laboratories are daily being forged new weapons to deal with the destructive forces which threaten mothers and infants. The last decade has recorded, for example, remarkable contributions to our knowledge of the vitamins and hormones. With respect to the former, we have, in general, been led to new concepts of what constitutes adequate nutritional requirements for the pregnant woman. Vitamin E, or wheat germ oil, which is of apparent benefit in maintaining pregnancy, and is known as the antisterility vitamin, has found wide adoption in cases of habitual abortion; vitamin B_1 has been shown to be important in the pregnant state, and is of particular value in the prophylaxis and treatment of hyperemesis and polyneuritis of pregnancy.

Our newer knowledge of the hormones has at last given us an insight into the intricate mechanisms of reproductive physiology. This knowledge is still in a state of flux, but clinical application has already indicated the propensities these wonderful substances may have for the future, when more has been learned about them. The Ascheim-Zondek pregnancy test, which is based on the presence of the chorionic gonadotropic hormone, was introduced into clinical practice at about the beginning of the decade. Latterly, with the isolation of pure crystalline progesterone, corpus luteum therapy has been found of value in the treatment of habitual abortion. And when the basal metabolic rate is subnormal, thyroid extract is still an important agent in prophylaxis against abortion, premature labor and toxemia.

Other life-saving measures relate to the better care of the premature infant; the adoption of legislation leading to compulsory premarital and prenatal serology, and the newer knowledge of the care of the child born to the diabetic mother, to mention but a few.

SUMMARY

Some of the major trends in modern obstetrical practice have been analyzed, with a particular eye to the salvage of life and health which certain improvements have engendered in the last decade. Of principal significance is the vast increase in the number of women who are coming to the hospital to have their babies. Here more and better safeguards are being placed around the parturient, with the result that maternal mortality has dropped to levels never previously attained in this country. At the same time there has been a broad effort to educate the public by professional and non-professional organizations, particularly in regard to prenatal care. Meanwhile new personnel is constantly being trained for the task which lies ahead, namely, the extension of our present knowledge to every part of the nation.

We know so little about the things we are doing which are saving lives; as a matter of fact, we are really only beginning to inquire into the reasons why women die in childbirth. And that is as it should be. The fight to save lives must be predicated on a knowledge of those things which are now taking them, often so needlessly.

THE IDEALIST IN MEDICINE*

By FREDERICK E. KELLER, M. D.
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It is a distinct pleasure to be here; a distinct pleasure to be again on West Virginia soil—the soil of my native state.

Once more I stand beneath the skies
Of West Virginia,
Where azure tints and clouds that rise
Above the crest of panoramic hills
Commingle in broad bands of sun and shade
To roll as waves o'er those same hills,
Hail, West Virginia.

State born of freedom unto Man,
With rivers, valleys, gardens, woods,
With coal and oil and gas. Who can
But offer praise to those who live
Within thy terraced, rocky hills?
My West Virginia.

Where home may be a palace grand
Or cabin in some quiet grove,
And tarries love in both of them.
At birth to look upon God's hills,
Through life to view God's handiwork,
In death to sleep upon the heights
Of West Virginia.

In this practical, or rather impractical and war-torn age, when national honor of many nations has sunk to its lowest level, where greed and graft, envy and deceit rise above brotherly love; where money and position mean more than personal integrity, there is still a place for the idealist and the dreamer. The accomplishments worthwhile in the world; the inventions; the pursuits of science; the great advancements in astronomy, all have had their inceptions in the mind of some dreamer. In the field which you have chosen to enter, there ever have been dreamers, idealists and plodders, as well as impractical and avaricious men. These dreamers have spent time and burned much midnight oil in the effort to unravel some great mystery of medical science, with rarely thought of self, reward or financial gain, truly seeking to aid their fellow-men. The true heritage of such men of the profession is that of the idealist. The practical, self-centered individual always harkens to the cry, "The laborer is worthy of his hire", but unless a man can enter medicine as a chosen profession, not a business, with the idea of service, help to others, preservation of health, prolongation of life, study and concentration at all times, after graduation as diligently as before, he is entering the wrong field. The question resolves itself into, not of what is the laborer worthy, but is the idealist worthy of his ideals; is the dreamer worthy of his dreams?

"Yet each man
Following his sympathies,
Unto himself assimilating all;
Using men's thoughts and forms
As steps to rise. Who speaks at last
His individual word,
The free result of all things seen and heard
Is in the noblest sense original.

THE AUTHOR

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*Read before the Premedical Students, West Virginia University, March 18, 1940.

Each to himself must be his final rule
Supreme dictator to reject or use
Employing what he takes
But as his tool.
But he who self-sufficient
Dares refuse all aid of men
Must be a god or fool."

Ambition is a dream—a dream of position, power, wealth, conquest, ease, travel, or work and accomplishment. But in by far the fewest instances is ambition service—service true, unselfish, which is the most important and significant word that could dominate anyone's ambition.

"I count this things to be grandly true
That a noble deed is a step towards God,
Lifting the soul from the common clod
To a clearer aid and a broader view."

Years of preparation are necessary in medicine as well as in many other fields of endeavor. What greater satisfaction can be in the mind of the soldier than to be ready by preparation, resourcefulness and knowledge to meet the hero's supreme moment, and conversely how chagrined he must feel if for lack of knowledge he should fail in that great test? In your chosen field, knowledge must not only be acquired but stored away in available form in order that theory may be converted into practice, where experience, skill, successes, failures, differential diagnosis and level headedness are the knights at your command and with them one must be well prepared for continual service in the lists of the daily tournament against disease.

The satisfaction of hearing a baby cry after a well-managed and difficult delivery is as great to the interested physician as it is to the parents, and his feelings are as deeply moved if the results are contrary. The latter variety of result calls for an easy chair, a pipe and an analysis of the conduct of the case. It should be reviewed critically and catalogued in the mind with the points of failure and notable places for improvement in future cases. Even in the best recoveries the doctor is probably only the guide and not the omnipotent factor. Should he not carry contritely in his mind the words of Ambrose Paré, "I operated on him; God cured him." Or the poor result remain, if he is sensitive and analytical, as the "thorn in the flesh, to buffet him at all times" in the words of St. Paul.[4] The doctor feels his power in some cases, just as he feels his failures in others. He is puzzled why some human derelict will stage an amazing recovery from some apparently hopeless condition, while a genius or individual of high and unusual ability in a given line of work succumbs to a relatively lesser risk. Then he thinks; he studies more; he investigates; he learns that disease is no respector of prince or pauper; of genius or the moron; but that the type of the infection and the resistance hold sway and that often the mental giant is in a poor physical condition. I think of the illustration used by my famous professor of therapeutics, "There are after all only three kinds of pneumonia: First, the variety that recovers with some judicious treatment; second, the variety that recovers in spite of what is done and the third the variety that dies regardless of what is done."[5]

One does not begrudge youth its perspective nor its enthusiasm, but rather rejoices in both. However, I have never seen one individual too well prepared for the healing art nor one who did not wish later on that he had studied harder during youth's golden opportunity. It takes work, work, work to progress—but

"Not enjoyment and not sorrow
Are our destined end or way,
But to act that each tomorrow
Find us farther than today."

The old saying "all work and no play" seems to have been reversed. In my own little experience those who play all the time are the dull ones. Why follow the crowd, it is not going anywhere? Alexis Carrel[7] observed that the crowd never did anything for its own advancement and was always ready to ridicule the man who burned the midnight oil, but later on was perfectly willing

to profit by his discoveries and call him a hero after death. He further observed that in spite of institutions of learning and compulsory education, the index of intelligence has not advanced, and that at times some who are looked on as intelligent are only morons with good memories. The only road to success is work. Forgive me for indulging in the personal; I have known little in this world but work and am proud of the fact. I consider it a God-given privilege to be able to work, to improve the mind given me. It was my good fortune to be taught surgery by and to be resident under one who is called by friend and foe one of the greatest figures American surgery has produced. A colorful figure, the scope of whose mind was immense; who could quote fiction or history, poetry or prose, either ancient or modern, a past master of profanity, but with an understanding mind and heart and who was always for the underdog. His scientific knowledge and ability both in work and teaching were superb. I refer to the former distinguished Professor of Surgery in the Jefferson Medical College, the late J. Chalmers DaCosta. I revere his memory and prize highly the things learned from that truly marvelous mind. One of the most cherished incidents in my memory is the fact that he once got angry enough to swear at me. He was truly a dynamic figure, a remarkable personality, feared and respected by all, an ideal to many who knew him; an idealist to whom money meant so little and to whom the recovery of any patient meant so much. One of his favorite sayings was that the reason so many young men have difficulty in climbing the ladder of success is they are continually being knocked off by the older men coming down.

DEAN OF AMERICAN SURGERY

Genius is restless; the thirst for knowledge is insatiable. Inertia has no place in accomplishment. Richard Carstone, one of Dickens' characters, gave up the study of medicine because it required too much effort. Samuel D. Gross, one of DaCosta's teachers, and to whom he was assistant, was often called the dean of American surgery. This distinguished surgeon was always in hot water, particularly in his earlier career. Born near Easton, Pennsylvania, of German extraction, he received the early education of the community, taught school a short time and became interested in medicine. He apprenticed himself to a doctor in that city to read medicine. In a few months after reading the small library the doctor possessed and receiving so little instruction, he impolitely told the doctor that the treatment was behind the times and the knowledge meagre. Gross studied medicine in Philadelphia, taking the full course of two years in the Jefferson Medical College, but that too, was insufficient and with his mind athirst for knowledge he obtained a cadaver and drove back up the country with it in his carriage. He then proceeded to dissect the body and record all his findings. He learned anatomy first hand; his observations were keen; his work methodical and painstaking. These dissections and notes became the basis of his teachings and his work on pathological anatomy and surgery. The scope of his mind was remarkable. He was a thorough teacher, an extraordinary surgeon, a gifted author, a gentleman, but with a temper. It was DaCosta who said when the top of the old gentleman's bald head began to get red (they did not wear caps or masks in those days) it was time for everyone to get out of the way. Also of him it is related one morning after a hard night at the hospital and an unsatisfactory case, he opened the door of his waiting room and found it full of patients. He looked for a moment and said, "I wish you were all in hell, next in." Gross had an uncanny ability to evade a direct answer. In his autobiography,[8] he frequently evinces his dissatisfaction with conditions in the profession. In "Disputed Passage"[9] Dr. Forrester told the men how few were really fitted to be doctors and how few would amount to anything, but more than six decades ago, Gross tells that many of the students whom he was about to give their practical and oral examinations that

night should not be passed as they were not really fit to be turned out to treat human beings. However, the school and other members of the faculty practically demanded they receive their degrees.

RESPONSIBILITY INVOLVED

Then, as now, a man has no right to take human life in his hands unless he is imbued with the full sense of the responsibility involved and the patient, regardless of social standing, is of some importance to some one. The military surgeon since the day of Napoleon's famous surgeon-general, Baron Larrey, has by custom treated friend and foe alike, truly bearing out the biblical teachings. No one is so high in the social scale that therapeutics should differ to cater to their social needs. Napoleon recognized the fact that the doctor is often overcome with the importance of the patient and therefore is not always at his best, as is illustrated in his telling the surgeon who had been called to treat the sister of this mental giant, "Forget who she is, treat her as a woman of the streets." The policy of agreeing with the patient or accepting suggestions from his relatives or friends often finds the doctor in a peculiar position where he cannot exercise his best judgment. It may be good from a financial point of view to be always in accord, but it does not give real experience, demonstrate the physician's skill or ability, or cure a ruptured appendix by substituting an ice-bag and temporization to suit the convenience or desire of the patient for the imperative necessity of surgical interference. Furthermore, such policy does not keep such a one's mind in turmoil the entire night, for conscience blunted either through ignorance or poulticed by the balm of self importance,[10] knows no qualms and spends no sleepless hours in worry about a patient's welfare. I am told by one who was resident on the last active service of the famous Rudolph Matas, that the old gentleman, well along in years, would tell the resident to call him at two or three in the morning about a case which was worrying him. If five minutes over the time elapsed this surgeon would call and say, "Why didn't you call when I told you to?"

There is only one way to gain prestige, self-reliance or honorable success. Mushrooms grow overnight, but a hundred years grows a sturdy oak. Practices may be built on the insecure foundations of pomposity, hornblowing or personality and salesmanship, but the only way to go forward is by careful, methodical, painstaking care in the examination of any and all patients. Slipping over none, being swayed neither by the financial reward and social standing of the one patient, nor the lack of these standards of human appraisement in another. There is but one thing in this world to which one should bow and that is he who possesses greater knowledge. The man who is so busy leaving loopholes for himself instead of really knowing diagnosis, is of the same stripe and as poorly prepared as the student who cribs on his examinations when truly less effort is required to learn a subject. If an individual cannot get along without cribbing either as a student or in his chosen profession or business, he is certainly in the wrong sphere.

COMBINE EXPERIENCE WITH KNOWLEDGE

One must use correlation and observation, combining experience with knowledge, calling in the x-ray and clinical laboratory to support the observations and findings, not depending upon them as your masters. One is led to think of the many things throughout time that have been discovered to man's scientific knowledge and the discoverer's name attached thereto, and begins to realize the incessant toil, work, observation among all nationalities and climes necessary to amass those facts which are offered to you here: consider the veins of Galen; tubercle of Chassaignac; y-ligament of Bigelow; Traube's semilunar space; Broca's speech center; Charcot's artery; islands of Langerhans; Reidl's lobe of the liver; Stenson's duct; Macewen's triangle; Sibson's furrow; Litten's diaphragm sign; Grocco's sign; Tawara's node; auriculoventricular bundle of

His; duct of Wirsung; Ebstein's angle; McBurney's point; Nelaton's line; Kiesselbach's area; Hesselbach's triangle; Scarpa's triangle; Meckel's diverticulum; semilunar fold of Douglas; Alcock's canal; Zuckerkandl's fascia; exsanguinated zone of Hurtyl; ligament of Treitz; foramen of Winslow; zone of Zinn; foramina Thebesii; Eustachian tube and valve; Fallopian tubes; nerve of Wrisberg; the external respiratory nerve of Bell; fossa of Rosenmuller; fissure of Sylvius; fissure of Rolando; the fibers of Sharpey; Haversian canals; Malpighian bodies; sphincter of Oddi; Petit's triangle; sheath of Schwann; nodes of Ranvier—these and many, many more names can be added in any and all branches of medicine or subjects pertaining thereto, each of whom heard the call of service and science, and each of whom has added to the summation of human knowledge and achievement in the continual effort to eradicate disease, relieve pain and prolong life, which battle will continue so long as life shall last. It will continue as long as dreamers and idealists are born and endowed with an ambition which extends far beyond the individual span of life, spurred by that infinite celestial spark of God-given desire to do for others.

NO SURFEIT FROM POLITICS

There is no surfeit from those politically inclined; it is noticed in the neighborhood gang with children, one of whom is the self-appointed leader, while one or another caters to him and has all the drag. It is seen in the small town politician and his overgrown brother in the big city. Politics drifts into the schools, the colleges, the universities. The spirit of brotherly love seems to be smouldering, almost extinguished by the ashes of selfishness. Is it not what can I do for my brother, but how can I do him? Political ability is rarely accompanied by true ability in other lines; the loudest braying ass is seldom the best worker either individually or team. One cannot imagine a mathematician, astronomer or any other research worker or deep thinker at his best in a jitterbug environment. State and national politics are often tainted. It is true that political organizers and others" "drunk with sight of power" infuse themselves into the medical profession. Internships are obtained by some by drag; hospital staff positions may be procured the same way; non-medical boards influence or even control the physician or the surgeon and limit his field and practice. Loud voices fill the air; nationally and individually, too, many times we are pursuing will-o-the-wisps; the neighborly spirit so overemphasized means sitting on a man or nation's front porch in amiable conversation while a confederate enters the back of the house for plunder. The cross pursued is not the cross of Christ, but the cross of the dollar mark. The golden rule has become the rule of gold. The oath of Hippocrates needs rejuvenation with more and newer vitamins. The control of hospital management should never have gotten out of the hands of the medical profession, for who but the physician can know all the problems of the patient and the best methods of handling them. An independent worker who does not conform to the political customs is usually ostracised; the lore or custom or call it what you will is more important than the physician or the recovery of his patient.[1]

Oh for a life 'twould be a dream
Where everyone is what they seem,
Where honor rises above deceit
And lies can only mean defeat.
Where ethics means far more than gold
And duty measures wealth untold.
Where slander's voice is never heard
And friendship is a holy word.
Where ability is justly prized
And influence is by all despised
Where truth in regal splendor stands
Diplomacy lies beneath the sands.
If the golden rule reigned supreme
With faith in life — 'twould be a dream. [1]

The road after graduation in medicine is not all roses. By far too many men know more at the date of graduation than at any other time in their lives. Too many do not realize that commencement is just the commencement and that incessant work and study

are the lot of any who really expect to succeed.[13] Many years ago the celebrated Abernethy, as he walked into the lecture room in St. Bartholomew's Hospital, looked upon the crowd of medical students and said, half in curiosity, half in sorrow: "Good God, what is to become of all of you?" In 1869 Sir James Paget tried to find the answer to this question. He traced the careers of one thousand pupils of St. Bartholomew's for fifteen years after graduation. Only twenty-three achieved distinguished success; sixty-six attained considerable success; five hundred and seven attained fair success, that is, made a decent living but worked hard to get it; one hundred twenty-four did very poorly indeed; fifty-six failed utterly; ninety-six abandoned the profession; forty-one died while pupils; eighty-seven died during the first twelve years of practice and twenty-one of them perished from diseases due to their calling.

The conclusion is that only 8.5 per cent of a class will attain eminence or achieve considerable success, that 50 per cent will make a decent living, but it will be bought by strenuous effort, that 18 per cent will do very poorly indeed or will fail utterly and that nearly 10 per cent will abandon practice.

According to Paget's figures, almost one-third of any class of students made a mistake when they selected medicine for a profession. I am disposed to think that Paget's figures would apply today, that about the same proportion of a class will succeed, about the same proportion will fail, about the the same proportion will abandon the profession.

DaCosta[13] has said that medical students are inclined to be unconventional and given to nocturnal gaiety, but he also remembered that he had been one. Still they are of the greatest necessity to the health and progress of any nation.

We welcome you to a life of opportunity; opportunity to work for your fellowman; opportunity to discover many more things in science than have been dreamed of. You are entering a new era and the present is but a stepping stone towards the future. Enter with complete preparation, open minds and reverence, as idealists and dreamers, recognizing the privileges you enjoy to serve and accomplish, neglecting no opportunity:

Master of human destinies am I
Fame, love and fortune on my footsteps wait
Cities and fields I walk. I penetrate
Deserts and seas remote
And passing by hovel and mart and palace
Soon or late,
I knock unbidden once at every gate.
If sleeping, wake; if feasting, rise
Before I turn away,
It is the hour of fate
And those who follow me reach every state
Mortals desire and conquer every foe, save death.
But those who doubt or hesitate
Condemned to failure, penury and woe
Seek me in vain, and uselessly implore
I answer not and I return again no more.[11]

Several times I have mentioned DaCosta. It was he who inspired me to pen the following, with which and the creed it represents I leave you each to his own thoughts, hopes and ambitions and my wishes to each one of you for success:

No gold is there that brings true recompense
To one who helps his fellowmen each day,
Though weary oft, nor hand nor mind dare stray
As o'er some tragic form he works intense,
Restoring by his art and skill defense
Where ravishing disease has caused decay
Or injury that tokens no delay,
With many anxious friends in deep suspense.
Such tragedy must take its human toll,
Both from the patient and the one who works,
But he at cost of mind or self ne'er shirks
By day and night outreaching toward his goal;
To save a life if great or small the odds,
To know the skill that guides his hand is God's.[1]

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CHRONIC INFECTION OF THE CERVIX WITH PELVIC PAIN AND MENSTRUAL DISORDERS — A CLINICAL ENTITY

By J. W. CARNEY, M. D.
Logan, West Virginia

REPORTS on infections of the pelvic organs are so numerous that I hesitate to add further comments. However, chronic infection of the cervix with pelvic pain and associated menstrual disorders is a condition that has impressed me as being more or less a clinical entity in that it is seen so frequently and the course of events is so constantly the same. No doubt many others have been impressed by the similar findings also. It is a condition that is overlooked or mistreated by many, mainly because the use of the vaginal speculum is neglected.

In discussing this condition, I am not concerned with the typical case of salpingitis and its associated pathological findings, although similar symptoms may be seen in both conditions. I am mainly interested in the condition where the cervix is the infected organ and where the tubes are free from gross infection if inspected at laparotomy. Laparotomy is a procedure that is too frequently done when only this condition of cervicitis exists. It is done by those who make the mistake of thinking that most of these cases of pelvic pain and menstrual disorder require operation. The contrary is the rule. More and more reports are being seen in the literature on the conservative management of pelvic infections with heat. Some go so far as to say that surgery is only indicated in pelvic infection for the drainage of abscess formation.

A typical case in this clinical entity is a patient who presents herself to the doctor with a complaint of chronic aching in the lower abdomen and back that may or may not be severe and disabling. Another complaint, and one which frequently overshadows the pain is menstrual disorder. This consists either of prolonged, profuse, or too frequent menses, or a combination of all. The pain and menstrual disorder are the main symptoms, but following on this are extreme weakness, nervousness, headache, painful menstruation, painful intercourse, loss of weight, and emotional instability. Varying other symptoms can be present according to the debility of the patient. Such symptoms can overshadow the main trouble at times unless evaluated carefully. It is for this reason that so many of these patients are treated symptomatically without relief. Vaginal discharge may or may not be mentioned by the patient, depending partly on her intelligence and also the discomfort it is causing.

THE AUTHOR

Dr. Carney, graduate Medical College of Virginia, 1933; interned Hatfield-Logan Hospital and Logan Clinics; Secretary Logan County Medical Society.

Obviously, all of these cases need a careful history and physical examination because of the many conditions that can occur. Some of these are salpingitis and oophoritis, uncomplicated endocrine disorders, tumors, and anemias.

History will reveal that there has been a chronic vaginal discharge, usually for a long time. Pain has been present a good part of this time but in varying degrees. Then, more recently, the pain became more noticeable, the menstrual flow seemed to be more profuse, and the pain was exaggerated during menses. The patient had not been feeling well since this menstrual disorder began, but then she gradually became much worse. Along with this, she has become extremely

weak, nervous, irritable, generally upset, and has probably lost some weight. Other symptoms may also be present, and if she has been treated symptomatically for too long a period, she feels like a miserable wreck and has a horror of operations and everything else that she might have to go through.

Physical examination reveals definite findings. The patient is apt to be apprehensive. There is a pallor to the skin and mucous membranes denoting an anemia. Blood count confirms this and shows it to be secondary in character. There is a varying amount of tenderness in the lower abdomen and lumbar region. Inspection of the cervix shows a varying amount of infection with a mucopurulent discharge. Frequently, infected cervical lacerations are present. Bimanual examination reveals definite tenderness in the uterosacral ligaments with some thickening but no definite masses. The ovaries may be palpably enlarged.

ETIOLOGICAL FACTORS

A word should be said here about the etiological factors involved. First, there is primary bacterial invasion of the cervix, with gonorrhea heading the list as the infecting disease. Secondly, there is trauma of the cervix with secondary bacterial invasion. This trauma may be due to instrumentation as in dilatation for curettage or abortion, but the main source of trauma is childbirth, and this is overlooked much too frequently. If the proper postpartum care were given to the cervix, this subsequent secondary bacterial invasion would not occur. With the infected cervix existing, there is a definite etiology for the pelvic pain. The infection may spread on up to the endometrium by continuity, which no doubt happens to a certain extent. But the continued absorption from the cervix into the extensive pelvic lymphatic system is by far the main factor. The subsequent chronic pelvic congestion and infection affects all the pelvic organs and their nerve and blood supply. From this, there is a focus of infection that may damage any part of the body.

The etiology of the menstrual disturbance is primarily non-endocrine in this instance, but soon becomes an endocrine problem. Wolf,[1] in giving endocrine causes, writes that, "It should again be recalled that the normal menstrual flow is dependent upon the normal balance of the pituitary, thyroid, ovary, and the uterus, and that any interference with the proper functioning of any of these organs will result in an altered amount of menstrual flow." The disturbance in this instance is caused by the inflammation of the mucosa of the cervix and endometrium, and the devitalization of the ovaries secondary to the infection.

PROPHYLACTIC TREATMENT

Treatment is definite in this condition and invariably gives good results. A word might well be said about prophylactic treatment. This consists of avoidance of infection, desisting from trauma to the cervix when possible, and when the cervix is traumatized either from childbirth or any other cause, being sure that it is free from infection and healed before stopping treatment.

The first and most important thing to do in the active treatment of the condition is to get rid of the cervical infection. Electrosurgical treatment by conization is the method of choice here. The ordinary cautery is good but does not reach the infected cervical canal as conization does. (I use a short wave diathermy with electrosurgical unit combined, and with the special conization instrument.) First, a ten per cent solution of cocaine hydrochloride is applied to the cervix and canal for about ten minutes. This usually makes unnecessary the use of further anesthesia. The canal is coned out to remove all infected material. Then infected tissue and cysts at the external os are coagulated with a needle from the same unit. A tape may be left in the canal to promote drainage. Weekly care is given until the cervix is completely healed which takes about four weeks. This weekly care is very important in order to insure proper healing and avoid stricture of the cervical canal. After the conization, short

wave diathermy by means of a cable and induction current from the same unit is given over the lower abdomen two or three times weekly. This is continued until the pelvic tenderness is gone and all the structures involved have returned to normal or as near normal as possible.

USE OF PROGESTERONE

The next consideration in treatment is the menstrual disorder which is of prime importance if the patient is bleeding when first seen. Progesterone, one international unit daily, is given to check the immediate prolonged or profuse bleeding. One or two doses usually suffice. Anterior pituitary like hormone, 500 rat units daily for four or five doses will frequently serve the same purpose. Bed rest and ergotrate by mouth are measures also used in the more severe cases of bleeding. After the cervix has been conized, anterior pituitary like hormone is given two or three times weekly, in an attempt to bring the endometrium and ovaries back to normal more quickly. Occasionally the cases of severe bleeding do not respond to endocrine therapy readily and require curettement. These endocrine measures usually suffice though, except for possibly the giving of small doses of thyroid extract for extra stimulation.

General care and treatment is also of major importance in these cases, especially the treatment of the associated secondary anemia. Ferrous sulphate is given daily for this. One or more transfusions may be used to advantage in the more severe cases to promote quicker recovery. Proper rest is also important. Increased diet and vitamin therapy, especially B_1 will promote a more rapid recovery.

It is especially important to also clear up the residual infection in the pelvic structures. Short wave diathermy or Elliott treatments are probably the best methods. I prefer the short wave diathermy with the use of the induction cable instead of the pads. It is a safe, easy, and effective way of getting a penetrating heat to the pelvic structures. A definite and rapid resolution of the induration can be noted.

Varying degrees of this condition exist in different patients, ranging from pelvic pain and menorrhagia, up to a badly infected cervix with severe pelvic and back pain, and a debilitating menstrual disorder. Either the pain or menstrual disorder may occur separately in some cases.

In conclusion, I would like to emphasize several things. First, use the vaginal speculum in all pelvic examinations. And when examining the adult female, remember that the pelvic examination is extremely important. And if an infection is found, get rid of it regardless of whether the other therapeutic measures are used. The infection is usually the primary cause of the trouble, and without it the patient has the best chance to recover. No doubt, many endocrine cases have their beginning in an infected cervix. Davis[2] states that, "Inflammations of the cervix are the most common disturbances of the generative organs. Their importance lies in the fact that they leave residual pathologic changes which bear upon the future health and happiness of the patient." If every physician would remember this, and could realize the physical and mental disability and suffering that women, so afflicted, have to bear, as well as the poor marital relations that may develop, they would no doubt attempt to make life more pleasant for the female by better caring for these conditions.

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Artificial Hibernation

Artificial hibernation or "freezing" is hazardous and is not justifiable in the treatment of hopeless spreading cancer, Arkell M. Vaughn, M.D., Chicago, declares in *The Journal of the American Medical Association* for June 8 in a preliminary report of his observations on six such cases.

"Animal experimentations in this field might be of value as a preliminary to any future use of hibernation treatment for human cancer," he suggests.

CONGENITAL MEGACOLON OBSERVATION

By S. A. FORD, M. D.
Edwight, West Virginia

THERE are at least two clinical types of megacolon, one congenital or idiopathic and the other acquired. The first type which carries the name of Hirschsprung is the one most often seen. Strange to say, in cases of this first type an obstructing lesion cannot be found at the point where the bowel suddenly narrows. In the second, or acquired form of the disease, the trouble can come on at any time in life as the result of some mechanical obstruction in the distal part of the colon. The congenital type was first described by Parry in 1825 and later by von Ammion in 1842, but Hirschsprung's paper written in 1886 was detailed, and since its appearance, his name has been attached to the clinical picture.

CASE REPORT

Patient, H. H., male, age nine months was brought to me on September 10, 1933 by his mother, who stated that she was having trouble with his bowels.

Physical examination revealed a rather marked case of malnutrition. The chest was small and the ribs tended to flare at the lower borders. The abdomen was large and tympanitic. The neurological examination was negative. I advised warm saline enemas and suggested that the child be put on ripe bananas. The banana diet made the constipation worse. After approximately two weeks of observation I referred the case to the Coal Valley Hospital, Montgomery, W. Va., with a diagnosis of megacolon. The diagnosis of Hirschsprung's disease was verified.

On numerous occasions for a year or two following hospitalization, I was called to see this child in the home. Each time I found that the child's abdomen was increasing in size. His constipation at most times when I saw him was worse although for the past three or four years the patient was able to travel around in the car with his mother and seemed to be doing well except for the fact that his abdomen remained large. He was able to go to school and did excellent work. However, on January 6, 1940, at two a. m., I was called to see this boy who was having an apparent obstruction of the gut. Several minutes before I arrived, the patient died.

THE AUTHOR

Dr. Ford, graduate Medical College of Virginia; House Surgeon McGuire's Clinic and St. Luke's Hospital, Richmond, Virginia; at present in charge of the Medical Department Raleigh-Wyoming Mining Co., Edwight and Glen Rogers, West Virginia.

An autopsy was performed on the morning of January 6, 1940. A mid-line incision from the xyphoid process to the symphysis pubis was made, extreme care being taken to prevent puncturing a huge megacolon. The abdominal wall was extremely thin and the rectus abdominal muscles were scarcely visible. Upon opening the abdomen, the ileocecal junction was located at the precordial region, and the diaphragm was at a level with the nipples. The megacolon measured 21 inches in circumference and contained two and one-half gallons of fecal material. No obstruction of the gut was found.

A photograph of the megacolon taken immediately after autopsy, before deflation and removal of contents.

COMMENT

Learmonth and Marcovitz has shown that immediately after section of the nerves of the inferior mesenteric plexus of the dog there is an increase in intracolonic pressure. They have also shown that the thoracico-lumbar segment of the auto nomic nervous system provides the motor supply of the internal sphincter of the anus, and the inference is that these nerves exert a continuous tonic influence on the muscle in the terminal part of the bowel. In man, it is generally assumed that the fibers of the inferior mesenteric plexus (sympathetic), which end in the musculature of the colon and rectum, carry inhibitory impulses, but there is evidence to indicate that both the sympathetic and parasympathetic nerves have both motor and inhibitory actions. Hurst has invented the term achalasia to define the condition in which a sphincter fails to relax before an approaching wave, and he believes that this is what happens in the pelvi-rectal segment of the colon in Hirschsprung's disease.

As Alvarez has pointed out, perhaps the most simple explanation of the obstruction in Hirschsprung's disease and of the very similar contraction rings that occasionally cause obstruction in the small intestines is that, in the particular segment of gut involved, there has been a failure in development of those neurons in Auerbach's plexus which are in intimate connection with the intestinal muscle fibers. Alvarez's reason for suspecting this is that in lower forms of life when smooth muscle is cut off from its ganglion cells, it contracts into a hard ball and stays that way. Ogawa inclines to this theory, and there is some evidence for it in a paper by Della Valle who reported his inability to find any sign of nervous tissue in the contracted sigmoid colons of two brothers operated for megacolon.

Megacolon may be present at birth. In other cases, the deformity develops gradually during infancy. In still other cases, there are milder grades of the disease. The mother, not infrequently, comes to the office stating that the child's abdomen is larger and his constipation is worse. These cases do not often reach the physician until the second or third decade of life.

In many cases, in spite of the fact that for months these children have been carrying around large masses of feces, they show but few signs of either intoxication or reverse peristalsis. The symptoms which occur promptly in obstruction of the small bowel are absent. Occasionally vomiting and toxemia are present. Emaciation, anemia, a sallow complexion, anorexia, and lassitude, are complained of by some of the patients, but in many of them the only troublesome feature is the much distended abdomen.

Children with megacolon can go for weeks and months without a movement of the bowels.

DIAGNOSIS

The history, together with a glance at the patient whose abdomen is that of typical pot-bellied child, with a peculiar flaring of the lower ribs usually reveals the diagnosis. A röentgenogram makes the diagnosis doubly certain. A barium enema followed by an x-ray makes diagnosis easy; however, barium should not be used due to possible obstruction. Air, preferably oxygen or carbon dioxide, is absorbed easily and should be used by the röentgenologist.

That a familial tendency exists is apparently beyond question, cases of double occurrence in the same family being frequent. Popper reported megacolon occurring in twins, aged four years.

Grossly the characteristics are hypertrophy, dilatation, and elongation of the bowel involved with quite vascular and very much thickened omentum and mesentery with enlargement of the lymph nodes.

Microscopically the muscular coats, submucosal and mucosal layers, are thickened. The blood vascular elements and lymphatics are increased, and there is evidence of small round cell infiltration. The mucosa is pigmented and may show patches of ulceration.

TREATMENT

Many forms of treatment have been tried, most of them without much success. The first procedure is to try to empty the bowel and then to see whether the mother can keep it reasonably empty. Whenever the colon becomes remarkably distended again, in spite of extreme care on the part of the mother, some form of operation is considered. Before operation is attempted, the colon must be thoroughly cleansed out. The cleansing process may be carried out by giving food almost without residue and by using enemas of warm physiologic saline solution three times a day. A small daily dose of some laxative will help in emptying the bowel. Dilatation of the so-called pelvi-rectal sphincter with the help of a rubber bag has been attempted by Fullerton with some encouraging results. Diathermy of the abdomen has been tried by Amberg and Hurst who report good results in a few cases.

Many surgical measures have been attempted, such as cecostomy, colostomy and colectomy, but most of them have been abandoned on account of the poor results obtained. In recent years Royle of Australia, Judd, Adson, Rankin and Learmonth, following the suggestion of Wade, have performed lumbar sympathectomy with encouraging results. The objects of this operation are (1) to attempt to diminish the dilatation of the colon, (2) to try to leave its motor nerves in less disputed control, and (3) to attempt to relieve any opposition to the expulsion of the content of the bowel offered by the internal sphincter of the anus. The first and second are carried out by division of the inferior mesenteric nerves, and the third, by division of the presacral nerve.

All of the patients in whom some type of neurectomy has been tried at the Mayo Clinic have received benefit, and a few apparently have been cured.

Removing the cause of obstruction and exercising extreme care following the operation are very important.

Whenever a sympathectomy is done, usually the following procedure is carried out: A resection of the presacral with both inferior mesenteric nerves is done by incising the peritoneum in the mid-line over the promonotory of the sacrum, and the presacral nerve, which exists as one single cord, is picked up in the region of the left common iliac vein, and dissected upward to the inferior mesenteric artery where about one inch of each inferior mesenteric nerve is removed with the presacral.

The *New Orleans Medical and Surgical Journal*, 1935-1936, reports several cases treated by spinal anesthesia. Its report is very encouraging.

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Gallstones and Ether

Certain gallstones can be dissolved by ether, C. M. Burgess, M.D., Honolulu, T. H., declares in *The A.M.A. Journal* for June 15.

Such stones, he says, must be of pure cholesterol (fatlike substance) or fragments of stone bound together by cholesterol. These stones must be so situated that they are available to a direct bath in ether.

AN UNUSUAL ALLERGIC DERMATITIS FOLLOWING THE USE OF ESTROGENIC HORMONE IN OIL

By RALPH C. GREENBERG, M. D.
Terra Alta, West Virginia

THIS case report merits attention because of the severe and rare reaction to a commonly used, and generally harmless vehicle for an estrogenic hormone. Only one report of a similar response has appeared in the literature.

Mrs. H. B., age 42, a white housewife, was first seen by me on January 8, 1940. She was suffering from a troublesome artificial menopause, the uterus and ovaries having been removed two years previously. Since then she had gained fifty pounds, had suffered severely from hot flushes, arthritic pains, insomnia and emotional instability. The history included typhoid fever at five, an appendectomy at twenty-six and six normal pregnancies. She never had asthma, hay fever, urticaria, or any cutaneous allergic manifestation. On examination she was found to be uniformly obese, weighing 226 pounds. Other than a hypertension of 180/110, there were no positive physical findings.

Treatment was begun with 10,000 international units of estromone (endo) which were given between January 8 and January 15, 1940. There was prompt and dramatic amelioration of all her subjective symptoms. On January 18, the preparation was changed to proliculin (Loeser laboratory), 10,000 units again being administered. When she was next seen, five days later, there was a slight erythematous patch on the inner side of the right knee. Because she was otherwise symptom free, the dose of hormone was reduced to 5,000 international units of proliculin. On the next day a markedly pruritic, red, painful eruption gradually spread over both flanks, ankles and buttocks. This became progressively worse until on January 28, nine days after the onset, these areas were swollen, covered with small vesicles, intensely pruritic, and having pitting edema. The entire eruption was perfectly symmetrical. She complained of generalized malaise, headache and chilliness. The temperature was 102 degrees, the urine was normal and there was no eosinophilia. The injections were stopped and a lotion containing phenol, menthol and calamine applied. The eruption promptly subsided, the skin over the involved area became dry and scaly, all trace disappearing in two weeks.

Responding to an inquiry, Loeser Laboratories stated that the solvent used in their preparation was sesame oil and that no reports of such reactions had reached them. The patient was then given an intradermal test with 1/10 c.c. of proliculin, an almost immediate erythema, eight cm. in diameter resulting.

Although no report of a similar reaction to sesame oil has been found, Levison and Harrison report an almost identical response to cotton seed oil (theelin). Inquiry among active endocrinologists failed to bring recollection of such an allergic manifestation. However, because of the well known allergic proclivities of the vegetable oils when taken orally it is possibly that other, perhaps milder, reactions have been overlooked or ascribed to other causes. As the use of estrogenic hormone in oil is increasing, other cases will doubtlessly come to the observant physician's attention.

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"Incubator babies," if they survive, do not become midgets but grow to normal size unless they are abnormal in other ways, *Hygeia, The Health Magazine* says in answer to an inquiry. A child is an "incubator baby" because it is born prematurely and is therefore small. Midgetism is due to other causes than premature birth.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

In the early years of this century, the term "pre-tuberculous" was used to describe children who were in contact with an adult case of tuberculosis and those who were underweight or apparently below par in health. These children, it was believed, were in need of an abundance of fresh air, rest and additional food. Special open air classes were organized for them on the theory that by such devices the development of tuberculosis might be prevented. As the years passed, the soundness of these ideas was challenged and recently a Committee on Care and Education of Below-Par Children has reinvestigated the subject. Extracts of the report of this committee follow:

THE PHYSICALLY BELOW-PAR CHILD

Many school departments make special provision for so-called "exceptional" children, including the visually handicapped, the hard of hearing, the cardiacs and those presumably in danger of developing tuberculosis. Various terms have been used to describe these children, such as "delicate, undernourished, underweight, handicapped and lowered vitality." Because open air classes have been stimulated largely by tuberculosis associations throughout the country, the National Tuberculosis Association has felt a responsibility to review the problem and therefore appointed a committee to study the situation.

In the early open air classes, emphasis was placed on malnutrition and anemia — either or both of which were considered at that time to be predisposing factors in the development of tuberculosis—and on known contacts with an open case of tuberculosis. Today it is recognized that no matter how pale or undernourished a child may be, he will not develop tuberculosis unless he actually takes tubercle bacilli into his body. Therefore the term "pre-tuberculous" is no longer acceptable and its use should be discarded. The best way to prevent infection among children is to remove the case of tuberculosis from the home. Infection in a child can be detected by the tuberculin test. Tuberculosis disease in children between the ages of five and fifteen years is relatively unimportant; the tubercle bacilli are apparently walled off and cause little damage. The walling-off process seems to operate just as rapidly and completely if the child remains in school and participates in the normal activities of child life as when strict bed rest is instituted. A school child who has a positive tuberculin reaction, but whose x-ray reveals nothing abnormal, who is apparently in good health, and who after a thorough investigation of his associates at home and elsewhere is found not to be in contact with an open case of tuberculosis, usually does not need special care. Nor is such a child capable of transmitting tuberculosis. He is, however, entitled to the health supervision which is due every child. Throughout adolescence and early adult life he should be given an x-ray examination annually and watched.

There remains a group of tuberculous children for whom special care is necessary. These children may have such extensive infection that the body cannot well control it, or clinically serious tuberculous disease may have begun. Such children, both for their own welfare and also to protect others from the disease, need special care. The question arises whether it is not better to arrange home or institutional care for this group. Their number in any one locality is usually so small that either the expense of a special teacher for them or the transportation costs of collecting daily in one place a sufficient number to warrant a full-time teacher, is economically impractical. It is believed that such convalescent care as is needed must be worked out in the light of available local resources.

BELOW-PAR CHILDREN

"Malnutrition" is a loosely used term. Underweight is not necessarily a symptom of malnutrition, nor are all undernourished children underweight. The judgment of the physician based on one routine physical examination is not always dependable, for studies have shown that competent physicians vary widely in their independent judgments of nutritional status in the same children. Nutrition is not a single entity due to a single cause. Vitamin status, blood chemistry, and types and degrees of anemia are all recognized as important indices of nutrition status.

However, the physician can with some degree of reliability select those children who are physically below par. They include those who exhibit such symptoms as lack of stamina, lassitude, failure to gain weight, etc. Only a comparatively small number are below par primarily because of a condition needing medical care. For those who do need medical care the course of action should be to set the machinery going to obtain adequate medical care.

(Continued on page xxv)

President's Page

For the first time in the history of the two states, the organized medical profession of Virginia and West Virginia will gather at White Sulphur Springs on July 29-31, in a joint convention. This first reunion since the states separated in 1863 will no doubt go down in the records as one of the outstanding medical events of the Old and the New Dominions since the Civil War.

So much has already been said about this great occasion that there is little left to write about in this monthly page. Elsewhere in this issue of the JOURNAL will be found the complete Convention program, the list of social and recreational activities, business meetings, scientific and technical exhibitors, special lunches and alumni gatherings. Nothing has been left undone to provide the very finest in science, sociability, and entertainment. The result is an unusually keen interest and enthusiasm throughout the state which indicates more than a record attendance at White Sulphur Springs.

Aside from the scientific and social aspects of our seventy-third annual session, many important problems will come before our Council and House of Delegates for discussion and action. I refer to such matters as our 1941 legislative program, our proposed program of postgraduate education, and various irregularities relating to the mass method of handling workmen's compensation cases. Within the next two weeks, the delegates, councillors and officers of the association will receive a handbook from the Association headquarters in which will be printed the reports of all of our Association committees which will be considered at White Sulphur Springs. This pamphlet is being printed partly to expedite the work of the Council and House of Delegates, but chiefly to acquaint the officers and the delegates in advance with the important matters that will come before them for consideration. A number of extra copies of this handbook have been printed and any members who are interested may secure a copy by writing to the Association headquarters at Charleston.

It has been previously announced that our Convention rate at the Greenbrier Hotel is $9.00 per day, American plan. This is a most attractive rate when one considers everything it includes. However, for those who would prefer to stay at a smaller hotel, there are three excellent hotels in the village of White Sulphur Springs with European rates from $2.00 up.

We want to urge every doctor who can possibly get away to be on hand for our medical reunion with Virginia. The scientific program alone should warrant the attendance of every practicing physician. Add to this the congenial atmosphere of the Greenbrier, the golf, tennis and swimming facilities, the renewing of old and the making of new friendships, and the virtue and warmth of sociability in this troublesome era, and we do not see how any of you can stay away. Come to White Sulphur and actually participate in the making of medical history.

Frank V. Langfitt

President.

West Virginia Medical Journal

P. O. Box 787
Public Library Building
CHARLESTON, WEST VIRGINIA

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WHITE SULPHUR REUNION

The seventy-third annual meeting of the West Virginia State Medical Association and the seventy-first annual session of the Medical Society of Virginia will be held conjointly at the Greenbrier Hotel, White Sulphur Springs, on July 29-31, 1940. The complete convention program and all details relating thereto will be found elsewhere in this Convention Number of the JOURNAL.

The two scientific committees of the Old and New Dominions, headed by Dr. Wyndham Blanton of Richmond, Virginia, and Dr. J. B. Clinton of Fairmont, have rendered yeoman service in securing such a distinguished assembly of nationally known medical and surgical talent. The program boasts of an outstanding leader in almost every branch of medical science. These same leaders will conduct the roundtable discussions at the afternoon specialty and section meetings.

For the second straight year, all of the general scientific sessions will be held during the morning hours, from 9:30 to 12:30 o'clock. Afternoons will be given over to the sectional gatherings. In working out this arrangement, the committee felt that this plan would give every member at least two free afternoons at White Sulphur, and yet would provide at least three scientific meetings each afternoon for the specialties and others who cared to attend.

Sections and specialty groups which will meet at White Sulphur include the sections on medicine, surgery, pediatrics, and eye, ear, nose and throat, and specialty groups on industrial medicine, radiology, urology, heart and obstetrics. Special luncheons and dinners have been requested by the alumni of the Medical College of Virginia, the pediatricians, golfing enthusiasts and the Fellows of the American College of Physicians. If lunch or dinner meetings are desired by other groups, arrangements should be made at once through the office of the executive secretary at Charleston.

On behalf of the Greenbrier Valley Medical Society we extend a welcome to every doctor and every doctor's wife to the White Sulphur Springs meeting. We know that every member in attendance will enjoy a pleasant and profitable three-day session.

AMBULANCE CHASERS

Apparently tired of their aggressive members being injured by stretcher poles, the Kanawha County Bar Association has recently employed a part-time attorney to wage war against Charleston ambulance chasers. The campaign against ambulance chasing followed a lengthy investigation of the art by a special Bar Association committee appointed for that purpose.

We are interested in the Charleston campaign because ambulance chasing invariably involves the medical profession. Most of the victims are automobile accident cases. Practically every case is treated by a physician who, sooner or later, finds himself on the witness stand. In court he is often confronted by professional confreres whose findings are different than his own. Take it by and large, it is usually a pretty sorry business for all concerned.

There are, of course, plenty of legitimate suits that result from personal injury accidents, but very few of them are handled by ambulance chasers. The ambulance chaser generally gets his cases through "runners" or

through "tie-ups" with ambulance drivers, hospital orderlies or other hospital employees. The Charleston campaign is designed to fight fire with fire, as the Bar Association is using the armamentarium of the ambulance chaser to combat the practice. Already "tie-ups" have been made with ambulance drivers, hospital employees and physicians. The part-time attorney employed by the Bar Association will serve as the "runner" of the ethical legal profession.

Through the "tie-ups" mentioned above, the "runner" will be quickly informed when accident victims are hospitalized. A letter will immediately be sent to the injured person, or to some member of the family, warning against the methods of ambulance chasers and their hirelings and calling attention to the desirability of a family consultation on employing an attorney should one be needed. The letter will urge the recipient to inform the writer if any effort is made by any person to use high pressure tactics in the employment of legal talent.

We wish the plan great success. If the campaign is successful, it will not only curb the activities of ambulance chasing lawyers but will probably uncover sufficient evidence to bring disbarment proceedings against many of them. That will not only help our friends in the legal profession, but it will render a great service to the ethical medical profession, and will be of untold value to public weal.

COAL GROUP ATTACKS

The May 23, 1940, issue of the *Bulletin of the West Virginia Coal Association* again attacks the medical profession. An article headed "Bleeding Still Practiced by Some Doctors" deals with physicians who "bleed" the workman's compensation fund. The specific instance cited is that of a Charleston doctor who sent the compensation fund a bill for $207 for treating a worker with an abscessed leg. It was a compensation case. The Charleston doctor treated the case, although "the worker contributed monthly to the payment of a mine doctor who lived on the premises and was competent to treat the injury."

Apparently what irks our coal friends is the fact that the injured worker contributed monthly to the payment of a mine doctor who lived on the premises and whose services were not utilized. Mine doctors do compensation work for the coal companies and make no charge. They are paid by the monthly contributions of the employees. The coal companies make no contributions to the mine doctors. They simply impose on the services their employees pay for. Once in a long while an outside doctor treats an injury case and renders his bill through the compensation fund. Then the coal companies raise a terrible clamor, as in the instance cited in their May 23 *Bulletin*. They never stop to think of the thousands of dollars they collect from their employees, but only of the few dollars they occasionally have to pay.

We will not discuss the merit of the Charleston doctor's bill, other than to mention that he did make 29 calls at the worker's home and traveled 870 miles in so doing. But even granting for argument's sake that he did "bleed" the compensation fund, we cannot help but feel that he learned the technique from the coal people themselves.

At the present time the West Virginia State Medical Association is considering entering a case against a prominent coal company operating in West Virginia to recover a considerable sum of money for the company doctor. For several years this company, or its officials, charged the doctor $300 per month for his job. We have photostatic copies of some of the checks issued by the company to the doctor, showing a $300 per month deduction for "rent of medical equipment." Such equipment was non-existent, but the doctor said nothing for fear of losing his position. What he wanted with the job in the first place is difficult to understand.

The instance cited above is not the prevailing practice. Most of the coal companies, if

they "bleed" their employee funds at all, do so by collecting a substantial monthly assessment from them for medical service, paying a small salary to the company doctor, and pocketing the difference. This form of imposing on employee funds is practiced by possibly 15 per cent of all coal companies in the state. Almost 100 per cent of the companies secure free compensation service from the doctors whom their employees pay for.

We don't contend for one minute that the medical profession is free of "bleeders." There are leeches in every profession or group, even among coal operators. As a matter of fact, we have met with the coal people on two or three occasions in an effort to reduce "bleeding" to a minimum in both organizations. On each of these occasions we met with sullen resistance; the same kind of resistance that these people have displayed toward most new thoughts or ideas advanced in West Virginia in the present century.

Yes, medicine unfortunately has some petty grafters. We can weed them out with the help of the coal people, but we cannot get very far until the coal people express a willingness to clean their own skirts. Their present attitude reminds us of Russia, yelling about the dirty Finns.

GRADUATE MEDICAL EDUCATION

Important developments in the hospital internship, the hospital residency and the postgraduate educational opportunities for physicians in practice were suggested by the Commission on Graduate Medical Education, whose final report was published on June 25. The commission, which was organized by the Advisory Board for Medical Specialties on December 4, 1937, is now bringing to a close its three year study program. Its work has been financed by national foundations and interested professional organizations.

The internship, suggests the commission, should be considered as a basic preparation for the practice of medicine. It should round out and give practical application to the medical school course and, hence, should be closely allied to undergraduate medical education. It should prepare young physicians adequately to begin general family practice and should provide them with the essential preparation necessary to undertake further study leading to the practice of a specialty. It should not attempt to train men for the specialties directly and, therefore, the intern should not be given training in the detailed techniques of the specialties.

To prepare the intern for general practice, he should have experience in internal medicine, pediatrics, obstetrics and gynecology, and surgical diagnosis, minor surgery and treatment of emergencies. Special attention in these fields should be given to preventive medicine and the care of chronic diseases, conditions of the aged and functional disturbances. The whole atmosphere should be educational in character and the intern should learn by example as well as precept.

The residency is defined by the commission as a prolonged period of study in one of the special fields which can be properly classed as graduate education, whether an advanced degree is granted or not. The commission warmly supports the recommendation of the specialty boards that adequate attention be given during the residency to the basic sciences as they relate to the various specialties. It suggests practical ways by which hospitals may provide this basic science training in their own laboratories or through arrangements with medical schools. The report suggests that there is danger that too many residencies may be developed and stresses that, in the best interests of the patient, high quality of teaching in the residency is now more important than a large increase in the number of residencies. The essentials of a satisfactory residency are listed in some detail, although the commission takes pains to point out that it does not wish to standardize residencies or put them in a strait-jacket.

Postgraduate education the commission defines as study intended to keep a physician abreast of his chosen field of practice but not

intended to equip him to enter a new field. Separate and clearly defined types of work are recommended for general practitioners and for specialists. While there has been a marked and rapid increase in interest in the field of postgraduate medical education, there is still need for its further extension and for improvement in the type of opportunities offered. The report points out the advantages and disadvantages of the various types of training now provided.

The effect of the work of the specialty boards upon the practice of medicine is discussed in the report, which points out that these boards have provided a well defined yardstick for measuring an individual physician's competence in his specialty. Men in the specialties have been certified so rapidly that it soon will be possible for the great majority of the people of this country to have access to the services of certified specialists.

The entire report stresses the value of adequate training and points out that this will be reflected in improved care of patients.

MEDICAL MOBILIZATION

Within the next few weeks, Association members will be given an opportunity to participate in the plans for national defense. At New York on June 12, the House of Delegates of the American Medical Association voted unanimously to adopt the mobilization plan recommended by Surgeon General James Caree Magee of the U. S. Army. This plan, soon to be set in motion, will reach every county medical society and every member.

Through the county societies, the American Medical Association will immediately inaugurate a survey to determine the health, military fitness, medical specialty and availability for military duty of each of its 117,000 members. Records will be kept of each man willing to serve, whether with the armed forces or in a civil post. Each state will have a certain quota of volunteers. In the event of war, doctors will be called by their county medical societies as they are needed.

Heading this gigantic work is Dr. Irvin Abell of Louisville, past president of the American Medical Association. Serving under Dr. Abell will be a nationwide committee, with one representative from each of the nation's corps areas. Dr. Fred W. Rankin of Lexington, Kentucky, will be in charge of the Fifth Corps Area which includes West Virginia. An outstanding member of the Association will soon be selected to lead the mobilization plan in this state.

Probably before another month goes by, members will be called upon to furnish information and to participate in the general mobilization plan. We urge all Association members to cooperate to the fullest extent. None of us want war, but all of us appreciate the inestimable value of proper preparedness. If war comes, the medical profession will be ready.

Digitalis for Obesity

"Too much publicity has apparently been given to the reports of a method of weight reduction which involves administration of digitalis for suppressing the appetite," *The Journal of the American Medical Association* for June 8 says.

"The underlying thesis that the food intake determines the weight is, of course, correct: definite suppression of appetite will ordinarily be followed by loss of weight. Moreover the use of ipecac and similar drugs may result in a loss of appetite even before nausea and vomiting are manifested. Whether or not digitalis can produce a loss of appetite without harmful effects is more debatable. The work of Hatcher and Weiss in particular has shown that the nausea produced by digitalis is a reflex the sensory organs for which do not appear to be located in the heart.

"The observations reported by Bram on this method of reducing body weight (wherein he reports effective results) have attracted the attention of some writers for the public. Confirmatory evidence for his views is lacking. The method cannot be generally recommended unless its efficacy and safety have been thoroughly demonstrated by carefully controlled observations."

General News

A.M.A. Meeting

Dr. Frank Howard Lahey of the Lahey Clinic in Boston was elected to the office of president-elect of the American Medical Association at the New York meeting the week of June 10. He will take office at the Cleveland session in 1941. Dr. Nathan B. Van Etten of New York succeeded Dr. Rock Sleyster as president in New York.

Dr. James R. Bloss of Huntington was reelected to the A.M.A. Board of Trustees for a second term of five years. Dr. William A. Braasch of Rochester, Minnesota, was elected to the Board of Trustees to fill out the unexpired term of Dr. C. B. Wright, deceased. Other officers elected were Dr. Parke G. Smith, Cincinnati, vice president; Dr. H. H. Shoulders, Nashville, speaker of the House of Delegates, and Dr. Olin West, secretary. San Francisco was selected as the site for the 1943 meeting.

A committee of 10 physicians and five officers of the American Medical Association was authorized to coordinate the efforts of the medical profession in the national defense plan. Dr. Irvin Abell of Louisville was named chairman of this group and Dr. Fred W. Rankin of Lexington, Kentucky, was named as coordinator for the Fifth Corps Area in which West Virginia is located. Within the very near future, Dr. Abell announced that cards would be sent to all physicians in the United States to fill in with their age, qualifications and willingness to serve in the army or in work at home.

Among the West Virginia doctors in attendance at the A.M.A. meeting were Drs. Frank V. Langfitt, Ray M. Bobbitt, James R. Bloss, Walter E. Vest, Oscar B. Biern, George M. Lyon, D. N. Barber, John E. Cannaday, W. L. Cooke, J. E. Blaydes, T. H. Blake, W. C. McCuskey, S. H. Burton, A. P. Butt, Jr., C. H. Clovis, J. W. Carney, B. W. Corbitt, John E. Echols, George Evans, Ivan Fawcett, W. S. Gilmer, E. M. Hamilton, D. L. Hosmer, S. S. Jacobs, L. P. Jones, L. C. Kean, H. S. Keister, L. S. King, Frank V. King, Fritz Levy, H. G. Little, L. R. Harless, J. S. Malloy, S. E. McFetridge, W. A. McMillan, R. B. Miller, M. A. Moore, M. T. Morrison, Franklin B. Murphy, Thomas W. Nale, R. C. Newman, Howard T. Phillips, A. M. Price, Curtis G. Power, H. C. Skaggs, J. S. Skaggs, Robert M. Sonneborn, L. Phelps Stanley, Byron W. Steele, H. A. Swart, H. V. Thomas, W. J. Tomlinson, P. A. Tuckwiller, Edda Vone Bose, Halvard Wanger and Stanley R. White.

Drs. Randolph L. Anderson, W. P. Bittinger, Martin L. Bonar, J. J. Brandabur, S. Oscar Fry, E. L. Gage, H. L. Goodman, H. H. Haynes, V. E. Holcombe, L. D. Norris, Donald R. Roberts, R. J. Snider, Walter C. Swann, R. B. Talbott, James E. Wilson, Fred E. Brammer, Clement C. Fenton, James G. Leech, J. R. Tuckwiller, Milton Wolpert, Harold H. Howell and Howard G. Weiler.

A.M.A. to Stand Trial

On December 20, 1938, an indictment was filed in the District Court of the United States for the District of Columbia charging the American Medical Association, Medical Society of the District of Columbia, Harris County (Texas) Medical Society, Washington Academy of Surgery and twenty-one individual defendants with conspiracy to violate section three of the Sherman Anti-Trust Act, *The Journal of the American Medical Association* for June 8 says. The defendants filed a demurrer to the indictment. This means that the defendants contended that, even assuming everything alleged in the indictment to be true, there was no violation of the law as charged. Of course, on the issue thus formed the courts were bound to take as true, whether or not it was in fact true, each and every allegation of the indictment. The District Court agreed with the defendants' contention and on July 26, 1939, sustained the demurrer and dismissed the indictment.

From that order Thurman Arnold, as Assistant Attorney General, prosecuted an appeal to the Court of Appeals of the District of Columbia. While the case was pending in the Court of Appeals, and before a decision there, the government filed a petition in the Supreme Court of the United States for a writ of certiorari to remove the case from the Court of Appeals to the Supreme Court of the United States. The defendants did not oppose this petition, but the Supreme Court denied it, probably on the theory that the issues presented were raised by demurrer and that the case had not been tried and the real facts did not appear in the record.

Thereafter the Court of Appeals proceeded to consider the case and on March 4, 1940, it re-

versed the order of the District Court and remanded the case to the District Court for trial. The Court of Appeals in its opinion said:

"Defendants say that what they are charged with doing amounts to no more than the regulation of membership in the society and the selection of the persons with whom they wish to associate; that under their rules disobedient members may lawfully be disciplined, and that disciplination does not amount to unreasonable restraint. This may very well be true, and in considering the contention we are not unmindful of the importance of rules of conduct in medical practice, rules which can best be made by the profession itself. We recognize, in common with an almost universal public opinion, that in the last half century, through this means, the quack and the charlatan have been largely deprived of the opportunity of preying on the unfortunate and the credulous. We also recognize that in personal conduct and in professional skill the rules and canons, so established, have aided in raising the standards of medical practice to the advantage of the whole country. We are mindful of a generally known fact that under these rules and standards there has developed an esprit de corps largely as a result of which the members of the profession contribute a considerable portion of their time to the relief of the unfortunate and the destitute. All of which may well be acknowledged to their credit."

The court went on to say that, notwithstanding the foregoing, the defendants ought not restrain trade and that it thought under the allegations of the indictment the true facts should be brought out by a trial of the case, and that on a trial, if in fact restraint was shown, it would not necessarily violate the law if such a restraint was reasonable as a regulation of professional practice and that whether or not such restraint was reasonable as a regulation of professional practice must be shown in evidence on the trial of the case.

On April 29, 1940, the defendants filed in the Supreme Court of the United States their petition for a writ of certiorari to review the decision of the said Court of Appeals. The government opposed this petition and argued that the Supreme Court of the United States ought not decide the issues in this case on a demurrer to the indictment but ought to wait until the case had been tried and the real facts appear of record.

The Supreme Court apparently agreed with the government's contention in this regard, because on June 3 it denied the defendants' petition for a writ of certiorari. The Supreme Court of the United States did not decide the legal issues or any of them against the defendants but merely refused to review the decision of the Court of Appeals at this time and in effect said that the defendants would have to stand trial before it would pass on the issues.

The American Medical Association, its officers and the other defendants in this case feel certain that they have not violated the Sherman Anti-Trust Act and feel certain that they will be vindicated on a trial of this case, but they regret the expense that will necessarily be incurred in such a trial.

Coming Meetings

The twenty-fifth annual session of the American College of Surgeons will be held in Boston with general headquarters at the Hotel Statler, on April 21-25, 1941. Dr. James D. Bruce of Ann Arbor, Michigan, is president of the College and will have charge of the program of general scientific sessions. Dr. William B. Breed of Boston has been appointed general chairman of the session, and will be in charge of the program of clinics and demonstrations in the hospitals and medical schools, and of the program of panel and roundtable discussions to be conducted at the headquarters.

The nineteenth annual scientific and clinical session of the American Congress of Physical Therapy will be held September 2-5, 1940 at the Hotel Statler, Cleveland. For information concerning the program, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

Bloodletting for Hemophilia

Bloodletting from a vein (venesection) kept a hemophiliac patient or hereditary bleeder free of symptoms for seven years, George B. Lawson, M. D., Roanoke, Va., and A. B. Graybeal, M.D., Marion, Va., report in *The Journal of the American Medical Association* for June 8.

The patient was completely incapacitated because of joint symptoms (pain and swelling), nervousness and apprehension that occurred with the bleeding. Venesection, about once every six weeks, at the onset of symptoms kept the patient rather well for the seven years, except for discomfort in one knee. An x-ray of this knee showed cysts in the region of the knee cap and thigh bone.

Official Call

The seventy-third annual session of the West Virginia State Medical Association will be held at White Sulphur Springs, West Virginia from Monday, July twenty-ninth to Wednesday, July thirty-first, Nineteen hundred and forty.

The Medical Society of Virginia will meet conjointly with West Virginia State Medical Association.

The House of Delegates will convene at four thirty o'clock on Monday afternoon, July twenty-ninth, and again on Tuesday evening, July thirtieth.

The Scientific Assembly of the Association will open with the General Meeting held on Monday, July twenty-ninth at 9:30 A. M.

Attest
Joe W. Savage
Executive Secretary
Charleston, West Virginia, June the fifteenth

Frank V. Langfitt, M. D.
President

GENERAL SCIENTIFIC ASSEMBLY

Auditorium, Greenbrier Hotel

Monday Morning, July 29, 9:30

Presiding: Dr. Hugh H. Trout, President, Medical Society of Virginia. Dr. Frank V. Langfitt, President, West Virginia State Medical Association.

SCIENTIFIC PROGRAM

"Management of Urinary Infections in Childhood."
Dr. Ralph M. Tyson, Philadelphia, Pa.

Discussion:
Dr. Russell Bond, Wheeling.
Dr. W. W. Waddell, Jr., University, Va.

"The Orthopedic Treatment of Arthritis."
Dr. George E. Bennett, Baltimore, Md.

Discussion:
Dr. Justus C. Pickett, Morgantown.
Dr. H. H. Wescott, Roanoke, Va.

"The A. M. A. Bureau of Industrial Health."
Dr. C. M. Peterson, Director, Chicago, Ill.

"Lesions of the Small Bowel."
Dr. Ross Golden, New York City, N. Y.

Discussion:
Dr. J. E. Wilson, Clarksburg.
Dr. Vincent W. Archer, University, Va.

Monday Afternoon, July 29, 2:30 to 4:30

Roundtable on Pediatrics with Dr. Ralph M. Tyson.
Roundtable on Industrial Medicine with Dr. George E. Bennett and Dr. C. M. Peterson.
Roundtable on Radiology with Dr. Ross Golden.

Monday Afternoon, July 29, 4:30 to 6:30

Meetings of the House of Delegates of the two societies.

Tuesday Morning, July 30, 9:30 to 12:30

"The Patient Who Is Always Complaining."
Dr. Walter Alvarez, Rochester, Minnesota.

Discussion:
Dr. J. Morrison Hutcheson, Richmond, Va.
Dr. John P. Helmick, Fairmont.

"Sinus Therapy."
Dr. Wesley C. Bowers, New York City, N. Y.

Discussion:
Dr. Francis H. McGovern, Danville, Va.
Dr. William F. Beckner, Huntington.

"The Female Bladder."
Dr. A. I. Folsom, Dallas, Texas.

Discussion:
Dr. Herbert Wolff, Alexandria, Va.
Dr. W. L. Haltom, Martinsburg.

Tuesday Afternoon, July 30, 2:30

ORATION ON MEDICINE
Dr. Paul Dudley White, Boston, Massachusetts.

Tuesday Afternoon, July 30, 3:00

Roundtable on Internal Medicine with Dr. Alvarez.
Roundtable on E. E. N. and T. with Dr. Bowers.
Roundtable on Urology with Dr. Folsom.

Tuesday Evening, July 30, 8:30

PRESIDENTIAL ADDRESSES
Dr. Frank V. Langfitt, Clarksburg.
Dr. Hugh H. Trout, Roanoke, Virginia.

(The House of Delegates of the two societies will meet immediately following the Presidential Addresses.)

Wednesday Morning, July 31, 9:30 to 12:30

"The Delayed Treatment of Appendicitis."
Dr. Harvey B. Stone, Baltimore, Maryland.

Discussion:
Dr. Robert King Buford, Charleston.
Dr. J. Bolling Jones, Petersburg, Va.

"The Treatment of Delirium."
Dr. Karl M. Bowman, New York City, N. Y.

Discussion:
Dr. Joseph R. Blalock, Marion, Va.
Dr. Archer A. Wilson, Charleston.

"The Treatment of Pernicious Vomiting."
Dr. Frederick C. Irving, Boston, Massachusetts.

Discussion:
Dr. E. Newton DuPuy, Beckley.
Dr. C. J. Andrews, Norfolk, Va.

Wednesday Afternoon, July 31, 2:30

ORATION ON SURGERY
Dr. Irvin Abell, Louisville, Kentucky.

Wednesday Afternoon, July 31, 3:00

Roundtable on Surgery with Dr. Harvey B. Stone and Dr. Irvin Abell.
Roundtable on Heart with Dr. Paul White.
Roundtable on Obstetrics with Dr. Frederick C. Irving.

Wednesday Evening, July 31

Six o'clock cocktail party honoring Governor James Price of Virginia and Governor Homer A. Holt of West Virginia.

followed by

Annual Convention Banquet and Dance.

GUESTS OF HONOR

Irving Abell, M. D., Louisville, Kentucky; Past President American Medical Association; Clinical Professor of Surgery, University of Louisville School of Medicine.

Walter Alvarez, M. D., Rochester, Minnesota; Mayo Clinic; Professor of Medicine, University of Minnesota Graduate School of Medicine.

George E. Bennett, M. D., Baltimore; Associate Professor of Orthopedic Surgery, Johns Hopkins University School of Medicine.

Wesley C. Bowers, M. D., New York City; Fellow American Board of Otolaryngology.

Karl M. Bowman, M. D., New York City; Professor of Psychiatry, New York City College of Medicine.

Alfred I. Folsom, M. D., Dallas, Texas; Professor of Urology, Baylor University College of Medicine.

Ross Golden, M. D., New York City; Professor of Radiology, Columbia University College of Physicians and Surgeons.

Frederick C. Irving, M. D., Boston; Professor of Obstetrics, Harvard Medical and Harvard Graduate School of Medicine.

C. M. Peterson, M. D., Chicago; Secretary, Council on Industrial Health, American Medical Association.

Harvey B. Stone, M. D., Baltimore; Associate Professor of Surgery, Johns Hopkins University School of Medicine.

Ralph M. Tyson, M. D., Baltimore; Fellow American Board of Pediatrics.

Paul Dudley White, M. D., Boston; Massachusetts General Hospital and Fellow of American Board of Internal Medicine.

SCIENTIFIC EXHIBITS

West Virginia

"Studies on Gastric Motility"—E. J. VanLiere, M. D., West Virginia School of Medicine, Morgantown.

"Male Genital Tumors"—C. C. Fenton, M. D., West Virginia School of Medicine, Morgantown.

"Fractures of the Neck of the Femur Treated by Internal Fixation"—J. O. Rankin, M. D., Wheeling.

"Cardiovascular Disease"—W. J. Putschar, M. D., Charleston General Hospital, Charleston.

"Infant and Maternal Death Rates and Communicable Disease Control"—West Virginia State Department of Health, Charleston.

"Logan County Venereal Disease Control Project"—Logan County Medical Society, Department of Health, State of West Virginia, U. S. Public Health Service, Logan, West Virginia.

"Bronchiectasis"—A. V. Cadden, M. D., D. Salkin, M. D., Hopemont Sanitarium, Hopemont.

"Old Surgical Instruments"—R. H. Walker, M. D., Mountain State Hospital, Charleston.

"Cancer of the Rectum"—James R. Brown, M. D., Huntington.

"Exhibit of Malformations and Monsters"—C. S. Dodds, M. D., West Virginia School of Medicine, Morgantown.

Virginia

"Electroencephalogram" — David C. Wilson, M. D., University of Virginia Hospital.

"Miller-Abbott Tube"—(A Successful Method of Passing Same) — William A. Johns, M. D., Oscar L. Hite, M. D., Daniel D. Talley, M. D., Richmond.

"Lesions of the Small Bowel" (x-ray demonstration)—Vincent W. Archer, M. D., George Cooper, Jr., M. D., University of Virginia Hospital.

"Röentgen Therapy of Epitheliomas, Hemangiomas and Lymphangiomas" — Fred M. Hodges, M. D., Lawrence O. Snead, M. D., Raymond A. Berger, M. D., Richmond.

"Activities of the Virginia State Board of Health" —I. C. Riggin, M. D., Richmond.

"Results of the Use of the Bulgarian Treatment in Parkinsonism"—R. Finley Gayle, Jr., M. D., Richmond.

"Foreign Bodies in the Air and Food Passages" —Gill Memorial Eye, Ear, Nose and Throat Hospital, Roanoke, Virginia.

"Appendicitis Operative Technique and Results" (moving picture) — J. Shelton Horsely, M. D., John S. Horsley, Jr., M. D., Guy W. Horsley, M. D., Saint Elizabeth Hospital, Richmond.

"Plastic Operations for Hypospadias and Epispadias"—Austin I. Dodson, M. D., Charles M. Nelson, M. D., Richmond.

"Why Inguinal Hernia Recurs"—Charles R. Robins, M. D., Stuart Circle Hospital, Richmond.

"U.S.P. and N.F. Committee"—Virginia Pharmaceutical Association, Richmond.

"Childhood Allergic Problems" (Usual Routine Employed in the Study)—W. Ambrose McGee, M. D., Richmond.

"Macroscopic Staining" (Unbreakable Museum Jars)—Regena C. Beck, M. D., Stuart Circle Hospital, Richmond.

"Postgraduate Medical Activities" — Medical Society of Virginia, Richmond.

"Diaphragmatic Hernia" — Porter P. Vinson, M. D., Medical College of Virginia, Richmond.

"Pictures of the Puerperal Cervix"—M. Pierce Rucker, M. D., Richmond.

"Growth of Tubercle Bacilli on Different Media"—George B. Lawson, M. D., Roanoke, Virginia.

"Treatment of Fractures of the Jaws"—Atwood M. Wash, D. D. S., Richmond.

"Neurological Surgery"—C. C. Coleman, M. D., W. Gayle Crutchfield, M. D., Department of Neurological Surgery, Medical College of Virginia, Richmond.

General

"Cardiovascular-Renal Disease" — Donald B. Armstrong, M. D., Metropolitan Life Insurance Company, New York, N. Y.

"Silicosis" — Council on Industrial Health, American Medical Association, Chicago, Ill.

"Antiques of Pediatric Interest" (Infant Nursing Bottles) — Mead Johnson and Company, Evansville, Indiana.

"Oxyuriasis"—W. H. Wright, M. D., Division of Zoology, U. S. P. H. S., National Institute of Health, Washington, D. C.

"When Bobbie Goes to School" (a talking movie)—American Academy of Pediatrics in cooperation with Mead Johnson and Company.

"Diagnosis, Treatment and Control of Gonococcal Infections"—Walter Clarke, M. D., American Social Hygiene Society, New York, N. Y.

COMMERCIAL EXHIBITORS

Aloe, A. S. Company, St. Louis, Mo.

American Hospital Supply Company, Chicago, Illinois.

Borden Company, New York, N. Y.

Ciba Pharmaceutical Products, Summit, N. J.

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Doak Company, Cleveland, Ohio.

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E. J. Rose Manufacturing Co., Clarksburg, W. Va.

E. & J. Company of Pennsylvania, Philadelphia.

Feick Brothers, Pittsburgh, Pa.

Fischer, H. G. Company, Chicago, Illinois.

Fleet, C. B. Company, Lynchburg, Va.

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Gilliland Laboratories, Marietta, Pennsylvania.

Jones Metabolism Equipment Co., Chicago, Ill.

Kelley-Koett Manufacturing Co., Covington, Kentucky.

Kloman Instrument Company, Charleston, W. Va.

Lederle Laboratories, New York, N. Y.

Liebel-Flarsheim Company, Cincinnati, Ohio.

Lilly, Eli and Company, Indianapolis, Indiana.

M. & R. Dietetic Laboratories, Columbus, Ohio.

Mead Johnson, Evansville, Indiana.

Mellins Food, Boston, Massachusetts.

National Drug Company, Philadelphia, Pa.

Peoples Drug Stores, Washington, D. C.

Petrolagar Laboratories, Chicago, Illinois.

Philip Morris and Company, New York, N. Y.

Phipps and Bird, Richmond, Virginia.

Powers and Anderson, Richmond, Virginia.

Saunders, W. B., Philadelphia, Pennsylvania.

Schering Corporation, Bloomfield, N. J.

Sharp and Dohme, Philadelphia, Pennsylvania.

Smith, Kline and French Laboratories, Philadelphia, Pennsylvania.

Squibb, E. R. and Sons, New York, N. Y.

Valentine's Meat Juice Company, Richmond, Virginia.

VanPelt and Brown, Richmond, Virginia.

Westinghouse X-ray Company, Pittsburgh, Pa.

White Laboratories, Newark, N. J.

Wocher, Max and Son Company, Cincinnati, Ohio.

Wyeth, John and Brother, Philadelphia, Pa.

DELEGATES AND ALTERNATES

B-R-T County Society—Delegates, Drs. W. E. Whiteside, Parsons; S. G. Moore, Elkins, and Guy H. Michael, Belington. Alternates, Drs. J. M. Brand, Coketon, and R. J. Condry, Elkins.

Boone County Society—Delegate, Dr. R. L. Hunter, Madison.

Brooke County Society—Delegate, Dr. S. D. Steiner, Wellsburg.

Cabell County Society—Delegates, Drs. Frank Barker, Chauncey Wright, Don Kessler, C. P. S. Ford, and J. L. Hutchison, of Huntington.

Central West Virginia Society—Delegates, Drs. M. T. Morrison, Sutton; Eugene Brown, Summersville. Alternates, Drs. J. P. Eakle, Sutton, and Geo. D. Hill, Tioga.

Doddridge County Society—Delegate, Dr. Albinus Poole, West Union.

Eastern Panhandle Society—Delegates, Drs. M. H. Porterfield, and R. B. Talbott, Martinsburg.

Fayette County Society—Delegates, Drs. R. H. Jones, Montgomery; N. L. Cardey, Winona, and Gilbert A. Daniel, Alloy. Alternates, Drs. M. A. Moore, Longacre, and W. P. Bittinger, Summerlee.

Greenbrier Valley Society—Delegates, Drs. A. G. Lanham, Ronceverte, and D. G. Preston, Lewisburg. Alternate, Dr. T. G. Matney, Peterstown.

Hancock County Society—Delegates, Drs. E. R. McNinch, Weirton, and G. L. Beaumont, New Cumberland. Alternates, Drs. T. H. Bruce, New Cumberland, and A. B. Rinehart, Weirton.

Harrison County Society—Delegates, Drs. L. E. Neal, H. V. Thomas, James G. Ralston, and C. O. Post, Clarksburg. Alternates, Drs. H. H. Golz, W. H. Allman, and J. F. Williams, Clarksburg.

Kanawha County Society—Delegates, Drs. Russel Kessel, T. G. Reed, P. A. Tuckwiller, Randolph Anderson, B. H. Swint, W. W. Point, C. B. Smith, and Wm. A. Thornhill, Jr., of Charleston. Alternates, Drs. Bert Bradford, John Haley, A. Spates Brady, Jr., and A. E. Amick, of Charleston.

Lewis County Society—Delegates, Drs. A. F. Lawson and E. A. Trinkle, Weston. Alternates, Drs. Theresa Snaith, Weston, and Guy Stalnaker, Glenville.

Logan County Society—Delegates, Drs. I. M. Kruger, J. W. Carney, Logan; J. L. Patterson, Holden. Alternates, Drs. E. H. Starcher, Earling, and F. E. Brammer, Dehue.

Marion County Society—Delegates, Drs. John P. Helmick, J. L. Blanton, J. B. Clinton, E. D. Wise, Fairmont. Alternate, Dr. J. S. Maxwell, Fairmont.

Marshall County Society—Delegates, Drs. J. A. Striebich and D. C. Peck, Moundsville. Alternate, Dr. W. C. Boggs, Cameron.

Mason County Society—Delegate, Dr. J. H. Toupkin, Point Pleasant.

McDowell County Society—Delegates, Drs. F. E. LaPrade, Welch; M. F. Torregrossa, Ashland; R. H. Edwards, Welch, and James S. Vermillion, Welch. Alternates, Drs. J. C. Hutchinson, Welch, and G. P. Evans, Iaeger.

Mercer County Society—Delegates, Drs. Frank Holroyd, R. O. Rogers, and H. G. Steele, Bluefield.

Mingo County Society—Delegates, Drs. Geo. W. Easley and J. C. Lawson, Williamson. Alternate, Dr. R. F. Farley, Delbarton.

Monongalia County Society—Delegates, Drs. Carl E. Johnson, F. T. Scanlon and C. C. Romine, Morgantown.

Ohio County Society—Delegates, Drs. J. O. Rankin, Ivan Fawcett, Robert Armbrecht, Howard Phillips, and H. G. Little, Wheeling. Alternates, Drs. R. J. Reed, Jr., J. K. Stewart, E. S. Phillips, C. H. Clovis, Wheeling.

Potomac Valley Society—Delegates, Drs. R. W. Love, Moorefield, and E. A. Courrier, Keyser. Alternate, Dr. O. V. Brooks, Moorefield.

Parkersburg Academy—Delegates, Drs. Richard Hamilton, St. Marys; T. L. Harris, J. L. Wade and A. C. Woofter of Parkersburg. Alternates, Drs. Athey R. Lutz, C. L. Goodhand, E. B. Holmes, and H. A. Giltner, of Parkersburg.

Preston County Society—Delegates, Drs. H. C. Miller, Eglon; A. V. Cadden, Hopemont. Alternates, Drs. A. L. Starkey, Hopemont, and R. D. Harman, Kingwood.

Raleigh County Society—Delegates, Drs. D. C. Ashton, L. M. Halloran, and E. Newton Dupuy, Beckley; E. B. Wray, Stotesbury. Alternates, Drs. A. E. Echols, Prince, and C. A. Smith, Beckley.

Summers County Society—Delegate, Dr. D. W. Ritter, Hinton.

Taylor County Society—Delegate, Dr. Harold Noble, Grafton.

Wetzel County Society—Delegates, Drs. K. M. Hornbrook, and J. O. Theiss, New Martinsville.

Alternates, Drs. T. B. Gordon, E. C. Blum, New Martinsville; L. P. Stanley, Pine Grove.

Wyoming County Society—Delegate, Dr. J. F. Biggart, Mullens.

PAST PRESIDENTS

Date	*Place of Meeting*	*Name*
1867	Fairmont	W. J. Bates*
1867	Wheeling	John Frissell*
1868	Grafton	John Frissell*
1869	Clarksburg	H. W. Brock*
1870	Parkersburg	J. W. Ramsey*
1871	Martinsburg	W. J. Bland*
1872	Wheeling	J. M. Lazzell*
1873	Parkersburg	R. H. Cummins*
1874	Morgantown	M. S. Hall*
1875	Point Pleasant	M. Campbell*
1876	Wheeling	A. R. Barbee*
1877	Clarksburg	E. A. Hildreth, Sr.*
1878	Weston	J. W. McSherry*
1879	Martinsburg	W. H. Sharp*
1880	Parkersburg	W. M. Dent*
1881	Wheeling	W. F. Van Kirk*
1882	Wheeling	J. E. Reeves*
1883	Grafton	B. W. Allen*
1884	Clarksburg	A. Gerstell*
1885	Weston	George Baird*
1886	Charleston	T. A. Harris*
1887	White Sulphur Springs	S. L. Jepson*
1888	Huntington	L. S. Brock*
1889	White Sulphur Springs	L. D. Wilson*
1890	Wheeling	S. H. Austin*
1891	Fairmont	J. H. Brownfield*
1892	Clarksburg	C. Shriver*
1893	Parkersburg	D. P. Morgan*
1894	Berkeley Springs	R. W. Hazlett*
1895	Davis	D. Mayer*
1896	Wheeling	J. A. Campbell*
1897	Charleston	N. D. Baker*
1898	Martinsburg	C. E. Ulrich*
1899	Weston	J. L. Dickey*
1900	Morgantown	C. S. Hoffman*
1901	Grafton	A. H. Thayer*
1902	Parkersburg	G. A. Aschman*
1903	Charleston	H. B. Stout*
1904	Fairmont	T. L. Barber*
1905	Wheeling	T. M. Hood
1906	Webster Springs	S. S. Wade*
1907	Huntington	W. W. Golden*
1908	Clarksburg	F. Howell
1909	Elkins	V. T. Churchman
1910	Parkersburg	T. W. Moore
1911	White Sulphur Springs	C. A. Wingerter
1912	Webster Springs	C. O. Henry
1913	Charleston	F. L. Hupp*
1914	Bluefield	R. E. Vening*
1915	Huntington	H. P. Linsz*
1916	Wheeling	A. P. Butt*
1917	Fairmont	J. E. Rader*
1918	Martinsburg	Sam Holroyd
1919	Clarksburg	Robt. J. Reed
1920	Parkersburg	H. R. Johnson
1921	Charleston	J. H. Anderson
1922	Huntington	Geo. A. MacQueen*
1923	Beckley	John N. Simpson
1924	Wheeling	R. A. Ashworth
1925	Bluefield	Geo. D. Jeffers
1926	Morgantown	James R. Bloss
1927	White Sulphur Springs	C. R. Ogden
1928	Fairmont	C. A. Ray*
1929	Martinsburg	H. M. Hall*
1930	White Sulphur Springs	W. E. Vest
1931	Clarksburg	C. H. Maxwell
1932	Parkersburg	Albert H. Hoge
1933	Charleston	D. A. MacGregor
1934	Huntington	Roy Ben Miller
1935	Wheeling	Rome H. Walker
1936	Fairmont	Charles G. Morgan
1937	Clarksburg	W. S. Fulton*
1938	White Sulphur Springs	C. W. Waddell
1939	White Sulphur Springs	Ray M. Bobbitt
1940	White Sulphur Springs	Frank V. Langfitt

* Deceased.

SPECIAL MEETINGS

A number of specialized groups are planning "get togethers" at White Sulphur Springs. Special meetings and luncheons already scheduled include:

Fellows of the West Virginia Section of the Southeastern Surgical Congress Dinner, 6:30 p. m., Sunday evening, July 28, for the purpose of electing section officers for the coming year.

Medical College of Virginia Alumni Dinner, Monday evening, July 29.

Pediatric group luncheon at noon, Monday, July 29.

American College of Physicians luncheon at noon, Tuesday, July 30.

Obstetricians and Gynecologists luncheon at noon, Wednesday, July 31.

Other groups that plan special meetings at White Sulphur should get in touch with the office of the executive secretary at Charleston.

. . . PROGRAM . . .

Sixteenth Annual Meeting

WOMAN'S AUXILIARY TO THE WEST VIRGINIA STATE MEDICAL ASSOCIATION

in Joint Session with

WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF VIRGINIA

MONDAY, JULY 29

12:00 noon . . . . . Registration

2:00 p. m. . . . . Executive Board Meeting
Presiding: Mrs. V. E. Holcombe.

4:00 p. m. . . . . Tea by The Greenbrier Hotel
honoring
Virginia and West Virginia Auxiliaries.

Evening . . . . . Informal Reception and Dance

TUESDAY, JULY 30

9:00 a. m. . . . . Formal opening of Convention

Presiding . . . . . Mrs. V. E. Holcombe

Invocation . . . . . Rev. Ben R. Roller

Address of Welcome . . . . . Dr. Guy Hinsdale, President, Greenbrier Valley Medical Society.

Response . . . . . Mrs. Ray Kessel, Charleston

Introduction of Convention Chairman—Mrs. J. S. Klumpp, Huntington.

Report of Credentials Committee—Mrs. R. H. Walker, Charleston.

Memorial Service for Deceased Members.

Business Session and Reports of Officers and Committees.

12:30 p. m. . . . . "West Virginia Day" Luncheon
Presiding—Mrs. V. E. Holcombe.

Address: "Present Day Opportunities of Service for the Doctor's Wife", Mrs. Charles P. Corn, President, Southern Medical Association Auxiliary.

3:00 p. m. . . . . Golf Tournament
Chairman, Mrs. Edwin Humphrey, Huntington

WEDNESDAY, JULY 31

8:00 a. m. . . . . Past Presidents' Breakfast
Mrs. E. H. Starcher, Chairman.

9:00 a. m. . . . . General Meeting
Mrs. V. E. Holcombe, presiding.

Report of Nominating Committee.

Election of Officers.

Installation of Officers.

1:00 p. m. . . . . "Virginia Day" Luncheon
Presiding—Mrs. H. A. Latane.

Address: "Coordinating the Auxiliary Program", Mrs. V. E. Holcombe, National President of Woman's Auxiliary.

POST CONVENTION BOARD MEETING

Time and Place to be Announced.

Presiding—Mrs. H. V. Thomas.

Evening . . . Annual Convention Dinner and Dance

Homespun Medical Advice

"Never put a baby's clothes on over its head or cut its hair before the twelfth month or its finger-nails before the sixth month" is an example of the advice offered to mothers in the more remote sections of the United States, which is cited by L. W. Bryce, Ronceverte, W. Va., in *Hygeia, The Health Magazine* for June as a part of the vast store of homespun medical preventives and treatments accumulated in such communities through generations. Such superstitions, which he calls "granny medicine," are found in many sections of our own country as well as in other so-called "uncivilized" places, Mr. Bryce points out.

"All of us are familiar with the less bizarre forms of granny medicine," he says. "Grand-dad always carried a potato or buckeye in his pocket to ward off the twinges of rheumatism. Many persons wore a black cotton thread tied about the neck to prevent croup.

"A red string worn about the little finger is said to check the tendency to nose bleed. If this should fail, a necklace of red corn kernels will always do the trick. It is also well to know that a key dropped down the back is useful in stopping a nasal hemorrhage that is in full swing. This failing, a silver coin held under the upper lip is more potent.

"For manual workers granny prescribes a wristlet of leather, if possible a part of a discarded horse harness. This pevents sprains and strengthens the wrist. And it is a well known fact among grannies that a nail wound will never cause lockjaw if the nail is well greased with bacon fat and carried in the pocket until the wound is healed."

County Society News

Cabell County

The regular monthly meeting of the Cabell County Medical Society was held on Thursday evening, June 13, 1940, at 8:15 p. m., at the Governor Cabell Hotel, Huntington.

Dr. J. Edwin Wood, Jr., M. D., Professor of Medicine of the University of Virginia School of Medicine, was guest speaker. His subject was "Recent Experimental Studies in Hypertension and Their Relation to Practical Problems." There was a representative attendance at the meeting.

JAY L. HUTCHISON, *Secretary*.

Eastern Panhandle

The regular meeting of the Eastern Panhandle Medical Society was held at the Shepherdstown high school on June 5. Dinner was served by the ladies of the Presbyterian church.

Gilbert McKown, editor of the *Martinsburg Evening Journal*, addressed the society on the doctor from a layman's viewpoint. The address was very timely and enjoyed by all. Seventeen members and seven visitors were present.

Resolutions of respect were passed on the death of Doctors Miller and Melvin. Copies were sent to their wives and families.

The society voted to send ten dollars to the National Physicians Committee as a donation to help carry on the work of the committee.

Martinsburg was selected as the next meeting place.

Dr. D. J. Shaw made application for membership in the Eastern Panhandle Society.

M. H. PORTERFIELD, *Secretary*.

Kanawha County

The regular monthly meeting of the Kanawha Medical Society was held at the Daniel Boone Hotel, Charleston, on the evening of June 4 with a good attendance. Dr. John Holloway, Associate Professor of Surgery at Western Reserve University, Cleveland, was the guest speaker and gave a highly interesting discussion of "Surgical Diseases in Children." Dr. Holloway is chief surgeon of the Babies' and Childrens' Hospital in Cleveland.

A business session and reports of standing committees followed the scientific program.

W. A. THORNHILL, JR., *Secretary*.

Logan County

The Logan County Medical Society held its regular meeting on the evening of June 5 at the Woman's Club in Logan. Dr. J. M. Meredith of the Department of Neurosurgery, University of Virginia, was the speaker. His subject was "The Treatment of Acute Head Injuries."

The Public Relations Committee, with the approval of the society, completed arrangements for a weekly radio program dealing with the Wagner Health Act, health problems and other matters pertaining to the profession of interest to the lay public. This will be carried on in conjunction with appropriate newspaper publicity.

Visitors at the June 5 meeting of the society were Dr. A. A. Wilson and Dr. P. H. Revercomb of Charleston and Dr. O. P. Hodge of Matewan.

J. W. CARNEY, *Secretary*.

Monongalia County

The regular monthly meeting of the Monongalia County Medical Society was held at the Hotel Morgan, Morgantown, on the evening of June 4 and was preceded by a six o'clock dinner. The guest speaker of the evening was Dr. D. E. Greeneltch of the Ohio Valley General Hospital, Wheeling, who gave an interesting paper on "Spinal Anesthesia."

CARL E. JOHNSON, *Secretary*.

Raleigh County

The June meeting of the Raleigh County Medical Society was an afternoon and evening session at the Pinecrest Sanitarium, on June 27. All the doctors of southern West Virginia were invited to attend, and an account of the meeting will appear in the next month's JOURNAL.

E. N. DUPUY, *Secretary*.

Wyoming County

The annual election of officers of the Wyoming County Medical Society was held on May 8 when the society met at the Wyoming Hotel in Mullens. Dr. B. W. Steele was elected president, Dr. J. O. Bailiff, vice president, and Dr. J. F. Biggart, secretary-treasurer. Dr. Biggart succeeds Dr. Ward Wylie who served as secretary of the society since its formation eight years ago.

J. F. BIGGART, *Secretary*.

Neighbor Journals

The Case for Private Medicine

After the appearance of the articles in the March numbers of *Fortune*, *Liberty* and the *American Magazine* so derogatory to medical practice and the profession in our country, the admirable article entitled "The Case for Private Medicine," which appeared in *Nation's Business* for May, was a surprise and cause of considerable satisfaction.

If anyone believes that the profession has been manifesting evidence of psychopathic delusions of persecution, he should read this article which gives in detail the steps that have been taken in an attempt to fully socialize medical practice in the United States.

"The Case for Private Medicine" is the fifth of a series of articles advocating private initiative in contradistinction to regimentation, the previous articles having dealt with insurance, investment banking, power and light and distribution.

We believe in the great power of public opinion. Although frequently the majority shows stupidity in its choice of leaders or public measures, this is generally due to lack of information. In the long run, the opinion of the majority seems to muddle through and is safer to rely upon than the leadership of one individual or a small group. It is, therefore, satisfying to find this article giving in detail "The Case for Private Practice" in the organ of of the National Chamber of Commerce, which has a circulation of 350,000.

Our system of medical practice is only one of a great number of activities that have been attacked by a group in government circles with the obvious aim of doing away with private enterprise.

While there has been a distinct trend in public thinking in favor of more government control of business activity in order to eliminate certain bad practices and to alleviate misfortune, such as that due to non-employment and old age, the pendulum has swung so hard that government has come not only to control, but has interfered with business, and in any number of fields has entered into competition. In no sphere has government competition been more in evidence than in medical practice.

Certainly the majority of American citizens do not favor a socialistic form of government. Calling

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MEDECINE—Two Weeks Intensive Course starting October 7, 1940. Two Weeks Course Gastro-Enterology starting October 21, 1940. One Month Course Electrocardiography and Heart Disease every month. Two Weeks Intensive Course Electrocardiography and Heart Disease starting August 5th. Four Weeks Intensive Course in Cardio-Vascular-Renal Diseases, Nervous Diseases, Diseases of Lung Pleura, Pericardium and Gastro-Intestinal Tract starting August 5th.

FRACTURES & TRAUMATIC SURGERY—Ten Day Intensive Course starting September 23, 1940. Informal Course every week.

GYNECOLOGY—Two Weeks Intensive Course starting October 7th. Four Weeks Personal Course starting August 26th.

OBSTETRICS—Two Weeks Intensive Course starting October 21st. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course starting September 9th. Informal and Personal Courses every week.

OPHTHALMOLOGY—Two Weeks Intensive Course starting September 23rd. Informal Course every week.

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attention to the trend in that direction should be sufficient to halt government control to the point of obstruction and competition with private enterprise.—*Minnesota Medicine.*

Paradoxical Situation

In a release from the United States Public Health Service, quoting an address made by Dr. Thomas Parran, surgeon general, at the recent conference of state health officers in Washington, this amusing paragraph appears:

"It is the custom of states" (quoting Dr. Parran) "at the beginning of the year, to encumber practically all allotted funds, but at the close of the fiscal period in some states unexpended balances of significant amounts remain in the state treasury. This discrepancy between budgets and expenditures is difficult to understand. Certainly, the need for service exists; yet programs are not sufficiently ambitious in all states to consume available funds. I should like to have your advice as to how this paradoxical situation may be remedied. Certainly, it is the intention of the Public Health Service to approve expenditure of Federal funds for any program that seems significantly sound and which gives reasonable promise of accomplishment."

We don't know what "advice" was given to Dr. Parran. We hope someone intimated that perhaps "this paradoxical situation" is the result of wisdom on the part of some health officers in not using the taxpayers' money simply because it is available but in limiting expenditures to those necessary for "sound" and "reasonable" programs. Just because the Federal Government says to a state, "here it is; come and get it", certainly is not a good reason why that state must accept the hand-out; especially if it has to stretch a good many points to try to justify the expenditure.—*Ohio State Medical Journal.*

Medical Preparedness

The state of Europe has forcibly reminded us of the readjustments necessary to adapt a large civilian population to the economy of war. The medical profession, in time of war, has thrust upon it suddenly, problems which do not ordinarily exist, and it, too, must readjust itself to meet them. War medicine and war surgery require special organization; centers for research must be established so that the biology, pathology, and treatment of war wounds and other conditions can be studied. The war in Spain has given us many basic ideas concern-

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*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, Vol. 23, No. 2, pages 201-206, March, 1939.

JOHN WYETH & BROTHER, INCORPORATED, PHILADELPHIA, PA.

ing prophylactic excision, preoperative transportation, and immobilization by means of plaster casts for all wounds of the extremities.

Then, too, the manner in which war is waged today has so far been vastly different from the World War. This difference raises the question whether the means for administering medical care and evacuation to the rear, which were in use 20 years ago, will suffice in this newer method of warfare. In the realization that our country must now embark upon a vast program to prepare ourselves, the medical aspects of war assume an important place in the minds of civilian physicians who, in an emergency, will be called upon to bear the brunt of the work, under the supervision of trained army and navy medical personnel. It would seem in order, therefore, that some means be made available to keep doctors informed of current war medicine as part of the preparedness program, and that it be done as soon as possible.—*New York Medical Journal.*

WITH OUR ADVERTISERS

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Vacations are too often a vacation from protective foods. For optimum benefits a vacation should furnish optimum nutrition as well as relaxation, yet actually this is the time when many persons go on a spree of refined carbohydrates. Pablum is a food that "goes good" on camping trips and at the same time supplies an abundance of calcium, phosphorus, iron, and vitamins B and G. It can be prepared in a minute, without cooking, as a breakfast dish or used as a flour to increase the mineral and vitamin values of soups and standard staple recipes. Packed dry, pablum is light to carry, requires no refrigeration. The new half-pound package is convenient while traveling.

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TUBERCULOSIS ABSTRACTS

(Continued from page 321)

A second group are those who are temporarily below par following illness or operations. Often such a child is better off in the ordered ways of school life although he is not able to carry a full program of work and activity.

In the great majority of below-par children the cause is usually determinable only after study of the child in relation to his home and family. Poverty, ignorance and maladjustment may be factors. Only after a careful study of such factors can one hope to solve the problem.

ARE SPECIAL CLASSES NECESSARY?

Special classes for "exceptional" children have undoubtedly made a contribution to the improved health of school children. One type, the open air class, has emphasized fresh air, food and rest. Fresh air has mistakenly been interpreted as meaning large volumes of outdoor air regardless of temperature. But recent studies have shown that cool air in gentle motion provides the best condition for comfort and for health. Supplementary feeding at school is open to question. Adequate food and regular meals at home are best, and supplementary feeding, if indicated, must follow the needs of the individual case. Whatever the cause of inadequate food may be, the solution lies not in special classes

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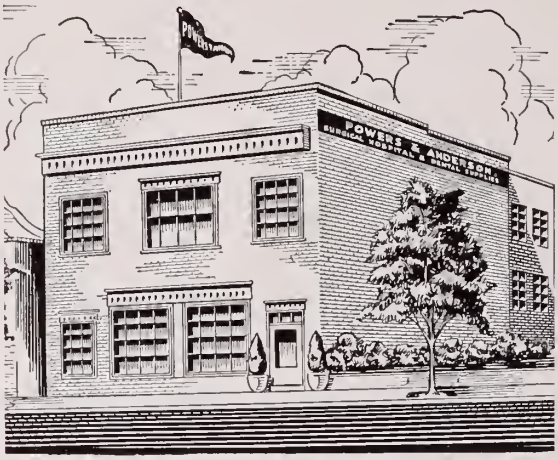

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but in home adjustments. Rest is an important need for the below-par child. Open air classes have demonstrated the value of periods of rest. The amount and the duration of the additional rest requirement for the individual child should be based on medical opinion.

SPECIAL CARE

Against this background of change in theories and facts the present-day problem of how to care for the below-par child must be met. Groups including the deaf, the crippled, the cardiacs and the visually handicapped need special adjustment of school procedures. For children with clinical tuberculosis special provision must be made for they are sick children. There remains a sizeable but less well defined group which includes children below par because of a condition needing medical care, or, temporarily, following an illness or operation, or from a variety of causes which may be socio-economic and related to the home. The school should provide for these below-par children a lightened school program together with extra rest. The easiest way to do this is by means of the segregated special class, but it is costly and educationally and socially unsatisfactory. How can the school best meet its problem?

The school physician can in the course of school physical examinations, select the below-par group for intensive study. The school physician, nurse, and teacher can by follow-up study of the child, the parents and the home, gain a better understanding of the underlying causes of the condition. These causes can, to a large extent, be removed or mitigated, by making social and economic adjustments in the home.

In summary, the responsibility of the care of the below-par child should be divided between the home and the school. Segregation in special classes is not necessary and is detrimental to the child's education and social development. Supplementary feeding at school is open to question. School procedures should be adopted for individual children to provide for rest periods, a lightened school program with avoidance of undue strain, and attendance at regular classes for as much of the academic program as the child is able to carry. This program, formulated for elementary school children should also be extended to junior and senior high school students.

The Physically Below-Par Child. Publication of the N.T.A., 1940.

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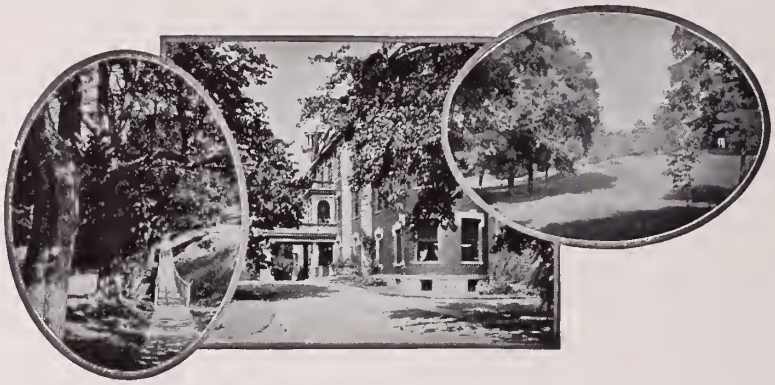

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Vol. XXXVI August, 1940 No. 8

DEVELOPMENTS IN ORGANIZED MEDICINE — 1939-1940*

(President's Annual Address)

By FRANK V. LANGFITT, M. D.
Clarksburg, West Virginia

THE AUTHOR

Dr. Langfitt, President, West Virginia State Medical Association, graduate University of Maryland School of Medicine; surgical resident, St. Agnes Hospital, Baltimore; postgraduate work at Mayo Clinic, Johns Hopkins and Cleveland Clinic; Fellow, American College of Surgeons.

There is no more timely subject and none more interesting to this organization than to review our accomplishments up to the present time and to present what we hope to accomplish for the rest of the year.

Each year sees many changes in our organization, all of which are, we hope, of a very constructive nature. When we look back to the founding of this Association seventy-three years ago by a small group of far-seeing and progressive doctors and compare our present organization with it, we realize what progress means, and we look with pride upon the monument located at Rivesville, West Virginia, which marks the location of our founding.

Since that time this Association has gradually grown until we now have thirteen hundred members—our membership having increased ninety-one since January 1, 1940.

We have not only increased our membership, but never in the history of the Association has our financial structure been as good as at the present time. The West Virginia Medical Journal has shown a profit of more than $2,400—the largest in its history.

Our organization, like all others, depends for its success on selecting efficient and capable committees to assist in making the year a success. We feel that we have been very fortunate this year in our selection when we review the work that has been done by them. Here I want to emphasize the work that is being done by some of these committees:

1. The Postgraduate Committee headed by Dr. George Lyon of Huntington has, after holding a great many meetings, formulated a comprehensive five-year program of grad-

*The annual Presidential Address delivered to The West Virginia State Medical Association at White Sulphur Springs, July 30, 1940.

uate medicine in West Virginia. This program calls for the employment of a full-time director and the expenditure of approximately $8,000 per year. Up to the present time this course of instruction has met with the greatest favor by the county societies to which it has been presented.

This committee will present in detail their recommendations to the House of Delegates.

MEDICAL SERVICE

2. The Medical Service Committee headed by Dr. D. A. MacGregor of Wheeling, has held two meetings and is endeavoring to work out problems relating to industrial medicine, particularly in regard to workmen's compensation and to the "company doctor" system. While the committee has done a great deal of preliminary work in this regard, its effectiveness has been somewhat hampered by the reinstatement of the indictment against the American Medical Association. It has been generally felt that the committee should not take too aggressive a stand until the national situation is cleared up.

This committee has also advised and assisted in the establishment of hospital insurance plans to bring about more equitable distribution of costs for hospitalization to West Virginia families of moderate income. The committee has observed a gradually decreasing demand for medical and surgical insurance, due, it is felt, to the inclusion of this type of insurance in commercial policies.

I also want to comment most favorably on the work done by the Committee on Scientific Work headed by Dr. J. B. Clinton of Fairmont, the Syphilis Committee which has as its chairman, Dr. W. M. Sheppe of Wheeling, the Cancer Committee headed by Dr. W. A. Wallace of Martinsburg, the Committee on Maternal Welfare and Child Welfare headed by Dr. James R. Bloss, Huntington, and Dr. A. E. Amick, Charleston, and our excellent Publication Committee with Dr. Walter E. Vest as editor.

We sincerely hope and anticipate the untiring efforts of these committees will continue throughout the rest of the year.

The medical profession, since its founding, has gone along in a modest way—not taking a very active part in politics—but the time has come for us to become political-minded and get sufficiently active in political circles to carry on the high standards we set out to accomplish, to be active enough to have the strength of our organization recognized and through this recognition to work with our state officials in securing the best equipped personnel for our health department and for our state institutions which require trained and skilled medical minds.

We are, indeed, very fortunate at this time in having such an efficient Public Health Council. It is composed of men of high professional standing, of wide experience and decidedly representative in the medical profession. We are also glad to say that very few of these men can be considered as political appointees.

The governing bodies of the state, in making appointments to the Public Health Council, have shown a willingness to advise with the officials and members of the State Medical Association and then attempt to select men best fitted to fill the appointments.

STATE HEALTH COMMISSIONER

A good example of the appointments suggested by the State Association is demonstrated in our present state health commissioner. This gentleman had been trained in public health work and at the time of his appointment was unknown to the administration, but on the recommendation of our Association the appointment was made and I am sure no one can question the efficient work of his department. I think the accomplishments of this department is due, in a great measure, to the highly trained and thoroughly skilled doctors who make up the personnel of it.

The chief medical examiner for the compensation department was a non-political appointment. He was employed by the former examiner and on account of his training in this work he succeeded him on his retirement.

One of our most important problems in the State of West Virginia is to assist our

state officials in appointing the superintendents and staffs of our state medical institutions.

We sincerely hope that in the future highly trained and thoroughly skilled men in our psychiatric institutions and in our tuberculosis sanatoria for political reasons will not be replaced by unskilled and inefficient men. This very thing has happened in the past and it is greatly deplored by the medical profession and should be by the public in general.

Surely if our friends become the victims of tuberculosis or insanity the least we can do for them is to place them in an institution where the best skill that is available can be obtained, but the unfortunate thing in most of our institutions is that the appropriations are inadequate to provide salaries sufficient to secure the best trained men and as a result of this the patients are not properly treated.

Our State Compensation Department is now functioning very successfully and most satisfactorily to the medical profession. I think I can safely say that there are less complaints now than at any time since its organization.

PUBLIC ASSISTANCE

The Department of Public Assistance is making excellent progress. The officials of this department have demonstrated an excellent spirit of cooperation with the physicians and hospitals of the state and while there are still a number of problems facing them to be worked out, we feel that they are doing a good job and will continue to go forward with the development of a better and more satisfactory organization to everybody concerned.

One of the most commendable and striking examples of the willingness of the physicians to assist this department and the state in caring for the surgical needs of the indigent was demonstrated when a large number of our most outstanding surgeons voluntarily donated $75,000 worth of their time to care for their needs. This was done with a double motive in view. First, to provide more funds out of the limited amount appropriated for the doctors doing country work, obstetrical work and making house calls; second, to convince the public that we are not a mercenary type of profession who are not still willing, as we have always been, to contribute to the relief of suffering humanity at any time it is needed.

We feel that most of the problems mentioned concern us directly, but there is one in which we are, and should be concerned—but only indirectly, as set forth in the president's page in the WEST VIRGINIA MEDICAL JOURNAL of May, 1940, and in a number of addresses made before county medical societies. We feel that it is high time that the medical profession takes steps to eliminate itself being used as an advertising medium for a large number of the pharmaceutical houses of the country.

PHARMACEUTICALS

The representatives of these concerns appear in our offices for the purpose of detailing us on the preparations they manufacture. Each visit brings a new preparation or an old one with a new name and a lot of "hooey" of its superiority to any other such product on the market, until, if we are inclined to listen seriously to these descriptions, we would have our minds crowded so full of unpronounceable names that we would have no thinking capacity left for anything else. We are all aware of the recent practice of a great many of these organizations putting their initials on their tablets or their names on the package in which the drug is dispensed. Once we prescribe one of these preparations it is, from that time on purchased over the counter and prescribed by our patient to all of her neighbors on our recommendation.

There are a large number of preparations being sold at the present time, a great many of which are identical, except as to strength, under as many different names as there are preparations; under the trade names, they are in a great many instances sold for three or four times the price that they would be sold at if manufactured by the pharmacist himself. The reason for this excessive price.

we are told by the representatives, is to enable them to carry on their research work. I will leave it to the doctors here to judge as to the efficiency of most of their research departments. After careful thought over the number of products presented to you in the last decade, figure out in your own minds what percentage of the total number are still with us.

I think I am safe in saying that by far the most valuable drugs or serums in existence today have been worked out by doctors doing research work and that they have been thoroughly tested by them before they were handed out to be prescribed or used generally. A great many of such preparations endure while the large majority produced by the pharmaceutical laboratories go by the wayside.

TRADE NAMES

Under the present system the druggist, to fill our prescriptions as they are written, buys and fills his shelves with a large number of containers which could probably be concentrated in one-sixth the number, if trade names were eliminated. The medical profession advertises these products and our patients pay the bills, while the pharmaceutical houses take in the profits.

There are manufacturing concerns who do not stamp their tablets with their initials or their names on bottles or packages and my recommendation to the medical profession to stop this exploitation is to ascertain who these concerns are and write their names on your prescriptions until this forced advertising is stopped.

Since taking office January 1, 1940, it has been my pleasure to visit a large number of the county societies of the state. A great many of us live in a sphere entirely too small to know how a great many of our neighboring physicians are getting along over the state in general. I was most favorably impressed by the high class of men with whom I met and by the excellent facilities they have in practically all the state for doing their work. These men are all of a progressive type and all seem willing to put their shoulders to the wheel in helping to move our profession onward and upward.

Without a doubt the most serious problem the medical profession is facing today is not confined to county societies or state societies, but to the nation. I refer to the widespread propaganda for socialized medicine. To prevent this system of medicine from undermining the foundation which our profession has worked diligently for hundreds of years to establish, certainly the most important step to take is to educate the public as to what it will mean to them. We can cite no more striking example of socialized medicine or socialized anything else than to point to Europe. The health conditions in, by far, the majority of the European countries under the supervision and control of their governments was rapidly breaking down—even before they were in war. A large number of incidents thoroughly demonstrate this fact—while under our American system of the practice of medicine the year of 1938 showed the best health record in the history of this country and was only surpassed by Sweden and Australia in the whole world.

These facts are known to a great many people of our country but even so, we are confronted with the would-be "fiifth columnist" who is willing to wreck our established record for the purpose of creating jobs for two or three persons for each physician, whose duties it would be to administrate a socialized system of medicine and thereby, live off the fruits of our labor.

EXTENSION OF MEDICAL SERVICE

We have long felt the need of some legislative organization whose duty it would be to keep the representatives of our legislative bodies informed on the best type of laws pertaining to health. I believe the majority of these men would be glad to sponsor legislation which would be for the betterment of public health if they were convinced certain proposed laws would do so.

The National Committee for the Extension of Medical Service was founded for this

purpose and is now functioning in that capacity. I feel that all medical bodies in the country should lend them financial support and aid them in every way possible in their efforts.

There probably has been no time in history that the world has been faced with more uncertainty or more bewilderment than we are facing today—with the countries of Europe going wild, with no regard for pledges or treaties—with no regard for humanity or human rights. Little do we know when an attempt on their part may be made to invade America. May God forbid that such a time may ever come, but in case it does I hope and feel that I am expressing the sentiments of every physician here when I say that we will not be found wanting—that we will be prepared and that our contribution in this war (if it comes) will be far greater in winning it than in any in the past.

I cannot close this address without paying tribute to the fine spirit of neighborliness that prompted our two states to meet together in the charming and historical atmosphere of White Sulphur Springs. Severed during the war between the states, we are today welding a lasting bond of professional brotherhood that few neighboring states enjoy. Perhaps in five years, perhaps in ten, we will meet together again to renew the fine friendships and associations that are now being made. To you, my Virginia confreres, and to your charming ladies, I wish to express for our own State Association our mingled feeling of pleasure and pride in having you with us. You have helped make this convention the best one in our history.

TREATMENT OF GONORRHEA IN THE MALE*

By DOUGLAS E. SCOTT, M. B., M. Sc. (Urol.)
Lexington, Kentucky

THE best available statistics indicate that in this country 1,037,000 new cases of gonorrhea reach medical attention every year. At least the same number do not reach medical care. There is just one other disease with a greater incidence—the common cold. And yet, let us be honest, gonorrhea remains by us the poorest treated, most misunderstood of the ills of human flesh, the stepchild of medicine.

We are only now beginning to realize that there are principles of treatment. Three years of experience with sulfanilamide and related compounds have served to affirm the necessity for adherence to these principles.

Early in 1937 *Time* magazine irresponsibly hailed the millennium. A drug had been found which would cure gonorrhea in twenty-four hours at a cost of a few cents. The first report of Dees and Colston followed a few weeks later. What is our considered medical judgment of this drug now? We know it can cure gonorrhea with dramatic swiftness and can be just as completely useless, and that there are all gradations of effect between. It is most interesting to note that the statistical reports on percentages of cures with sulfanilamide are becoming increasingly conservative. Forty-five to fifty-five per cent cures seems to be about the average level in recent reports. That is far below the 80 to 90 per cent cures reported in series in 1937. The best I seem to be able to do in my own practice is 15 per cent of cures with sulfanilamide.

Of related compounds sulfapyridine is the

THE AUTHOR

Dr. Douglas Scott, Lexington, Kentucky, urologist, graduated University of Toronto. Served three year fellowship in urology at Mayo Clinic. Attending urologist, Good Samaritan and St. Joseph's hospital, Lexington.

*Read at the Inter-County Medical Society, Louisa, Kentucky, May 24, 1940. Published concurrently with the Kentucky Medical Journal.

only one yet extensively available. First impressions, including my own, are that it is rather more effective than sulfanilamide. It will frequently work when sulfanilamide will not, but the converse is also true. Sulfapyridine, incidentally, has been chosen for routine use in the British Army.

Experience has brought a further warning. These drugs will frequently only attenuate the gonococcus resulting in an asymptomatic carrier state. The carrier state is not a new situation in gonorrhea, but it seems likely that it may become increasingly common because of the very simplicity of taking a drug by mouth. All our tests of cure then, must be even more rigidly applied after these drugs have been used.

FUNDAMENTAL PRINCIPLES

Assuming that our new drugs will cure even 50 per cent of cases, there still remains one-half that must be treated in some other way. It becomes clear that certain fundamental principles of management must apply to all cases irrespective of our newer aids, so I would direct your attention now away from the sulfonamides.

That a drug has been found which when taken by mouth will cure even an occasional case of gonorrhea marks an epoch, of course, in the history of mankind. It may serve best, however, as a vantage point to look back over the inglorious past of man's relationship with the gonococcus. The pathos of past mistakes may serve to emphasize presently conceived principles.

The earliest record of the disease that I have found is in the fifteenth chapter of Leviticus. Moses, with divine authority behind him, commanded that men with urethral discharges were to be considered unclean; that is, that they were to be segregated. Their clothing, bed clothing and effects were to be considered unclean. Those persons who came in contact with them were to be considered unclean. The biblical reference is to a flow of seed which is the literal meaning of our word gonorrhea.

The time of exodus of the children of Israel has been guessed at 1200 to 1300 B. C. Moses' plan of segregation was at least less meddlesome than many of the procedures which have followed.

Hippocrates, Galen and Celsus seem to have regarded gonorrhea casually. Apparently they considered it more of a nuisance than a disease.

Later Arab and Roman authors were more interested. They made specific therapeutic suggestions. Alzahavarius prescribed sea water and also salt water for urethral injections. That was 900 years ago. It is interesting that as the wheels of history turn we find sea water again recommended about 1830 and again in 1930 a writer extols a one per cent solution of sodium chloride as an injection in the male.

Shortly after Alzahavarius, attention was called to the fact that when epididymitis developed there was a cessation of discharge. Cause and effect were here confused and the complication was considered the result of the decrease in discharge. Re-establishment of the discharge then became the aim, even to reinfection with the pus from another case.

Then followed a flood of amazing concoctions to be used as injections. One was the prescription of John of Ardern; human milk from a mother nursing a male infant, this to be mixed with barley water and have added a little sugar, oil of violets and milk of almonds.

SYPHILIS

Came the sixteenth century and syphilis spread suddenly and violently over Europe. It is not surprising that the two diseases should become confused. Gonorrhea and syphilis were regarded as identical. Paracelsus declared them so and that settled it. It became the aim not to let gonorrhea degenerate into syphilis. Then as now a confusing variety of remedies was advised. Then, as now, publications appeared which contained the secret of a sure and rapid cure.

The two diseases remained confused for 200 years. John Hunter's classical error held up progress for fifty of these years. He

inoculated his skin with pus from a case of gonorrhea and developed syphilis, proving to his own and everyone else's satisfaction that the two diseases were identical.

Early in the nineteenth century light began to dawn. Ricord in Paris in 1931 inoculated 667 men with gonorrhea. None developed syphilis. That was a beginning of understanding. But surely those 667 men are unknown soldiers deserving a tomb of recognition. With the developing knowledge of bacteria, all sorts of organisms were described and claimed. Donné in 1837 thought the trichomonas was the cause. Albert Neisser identified the correct organism in 1879.

ANTISEPTICS

With the organism found, the battle with antiseptics began. The silver salts lead a host of chemicals which were invented, praised and discarded and up to the present the situation has remained the same. In the last decade alone we have been advised that a one per cent saline solution is a most efficient therapeutic agent; that pure ether injected into the urethra will cure; that formaldehyde vapors will do it, and that tincture of iodine is highly effective, but of course a little painful.

It seems that there has been something wrong with our approach. In spite of our fairly good knowledge of the bacteriology of the gonococcus and the pathology of the organs affected, we continue to behave like the primitive experimenters of centuries ago. Each new drug impresses some of us and is a financial success until the next one comes along. The bacteriologist makes a new vaccine; he may add bile salts, he may detoxicate it, he may make it more toxic, he may use live organisms, he may use fifty strains or use the filtrate of a culture and there will be a group of physicians favorably impressed until the next variation appears.

We have been slow to realize that, after all, the gonococcus is a very easy organism to kill; that anything we happen to have at hand will destroy it, even distilled water. In the face of the all too evident fact of the rebelliousness of the disease, it becomes obvious that our locally used antiseptics do not get to the organism to kill it. When eventual cure takes place it is clinically very evident that it has always been the result of the building up of bodily resistance.

If this is true, then logically it is on this fact that we must focus all our attention. Our efforts must be directed to fostering our patient's immunity responses. To do this best I think we can safely start from this premise —that the patient would eventually get well if he refrained from those things known to prevent cure.

The whole foundation of your treatment lies then in the instructions you give your patient. You must gain and maintain his complete cooperation. And on your part you must be prepared to follow him through to complete cure. Short of that you have obviously accomplished nothing. To the end that you will have his cooperation you will do well, I think, to let him know exactly what he is up against. He will be anxious to know at the outset how long it will take him to get well. I have been in the habit of telling my patients that I will be quite satisfied to be through with them in six months' time. It is best that the patient understand the common course of the disease and very clearly the fact that the resistance he builds up is at best fragile, and must be jealously guarded. Get the fact across to him that you can only help him; that he must cure himself.

INSTRUCTIONS TO THE PATIENT

I deplore the handing of printed sheets of instructions to patients. They lack emphasis and personal application. Instructions must come from you, deliberately, clearly, forcefully and repeatedly.

First and foremost the patient must avoid sexual excitement. Be explicit that this means not only sexual intercourse, but necking, dancing, suggestive movies, the skirt in the breeze at the street corner must be out. Married couples should stay at least as far apart as separate beds. Almost as important as sexual excitement as a thing to be avoided

is alcohol. In this respect beer is just as aggravating as hard liquor. Patients can help avoid nocturnal erections by having the proper amount of bed clothing; not too much nor too little, and by avoiding sleeping on the back. Bromides are of assistance in this respect sometimes.

Diet in general does not seem to be of any reasonable importance. I rather doubt that the so-called irritating food stuffs influence the disease course to any extent. However, your patient will probably want to be doing something about his diet. Tell him to avoid onions, pickles, mustard, peppers, catsups, chili, hot sausage meat and all the other spicy things which irritate the mouth. It may help him keep his mind on getting well.

WATER IMPORTANT

Your patient should drink copiously of water to the end that he will urinate frequently. Each urination is an irrigation. He should be instructed also to avoid carrying for any length of time a full bladder because experience has shown that a full bladder combined with physical activity is most conducive to complications.

Constipation should be avoided. Sufficient mineral oil should be taken to avoid straining at stool.

In regard to exercise habits, I believe you can be specific. Horseback riding and bicycle riding are obviously to be avoided. You have probably all seen complications follow long automobile rides. Fifteen miles should be the limit for any uninterrupted automobile excursions. Tell your patient to avoid the things he has to grunt or strain to do.

Bed rest is unquestionably the way to take larger doses of sulfanilamide. But for reasons of personal privacy and other practical necessities, going to bed will not be feasible for most of your patients.

I am presenting the instructions you give your patient as being the most important part of treatment. In considering actual therapeutic measures we will do well to keep the attitude that the only thing at stake is the time element; that the patient could get well eventually without our treatments. In treating him we are simply trying to get him well faster. Should our treatments fail of that purpose by breaking down immunity responses or spreading infection to fresh fields, then they are very much worse than useless.

It has been fairly general experience, including my own, that the biologic products, sera, vaccines, and filtrates are not of reliable assistance. I have seen them break down the partial immunity which my patients had struggled to build up. So far I have not been able to find a dose between a uselessly small amount and the danger line of overdose with any consistent accuracy and so have not felt justified in continuing to use the biological preparations.

Experience has shown that local treatments properly given are of very real value. The effect of chemicals used locally is not so much antisepsis as mild stimulation of mucous membranes and so increasing their own curative efforts. The chemicals which do this best are the silver salts, potassium permanganate and neutral acriflavine solutions. Various astringent solutions such as lead acetate, zinc sulphate and others I have tried and found not very helpful.

The first foothold of the disease is in the anterior urethra. Let us consider first the treatment of the infection there. Statistics show that posterior extension of the infection can largely be prevented if local treatments can be started in the first six days of the disease. By preventing posterior extension you may expect the disease to be eradicated in six to eight weeks.

LOCAL TREATMENT

I plead that local treatments be gentle both in the manner of administering and in the strength of solutions, and that they be given, if at all possible, by yourself and not the patient.

If circumstances are such that the patient must treat himself, then he should be precisely instructed by demonstration. A one-eighth ounce blunt-nosed Asepto syringe is probably safer than a one-fourth ounce size.

He should be told that too little treatment is many times better than too much; also that he should never treat himself if he has to hurry. To these ends he is advised to treat himself just twice daily. The injection should be made after urination and the solution held in the anterior urethra for five minutes by the clock. Show him how. It is not fair to the patient to give him a bottle of argyrol and a syringe and simply tell him to inject so many times a day.

If treatments are to be by you, once daily will usually be sufficient. If you use gravity irrigations, the irrigating reservoirs should not be higher than three to four feet above the level of the urethra. As the discharge decreases, the interval between treatments may be lengthened and when discharge has been absent two weeks and the urine clear you may they try to determine whether cure has taken place. If the discharge continues beyond ten days during treatment, the chances are excellent that invasion of the posterior urethra will occur.

EXTENSION OF THE DISEASE

When extension of the disease to the posterior urethra occurs, no symptoms may indicate it. Cloudiness in the second glass of a two glass urine test may be so transient that it may be overlooked. On the other hand it may be an event which the patient will long remember; urgent desire to urinate, painful frequency, terminal hematuria, even total hematuria with passage of large blood clots. Lesser degrees of these symptoms are, however, common. It is the consensus of opinion that during this acute stage of posterior infection, direct treatments to the posterior urethra are meddlesome. This is the time for oral sedatives, hot sitz baths and limitation of physical activity to the minimum.

When the patient is again urinating with entire comfort, irrigations through the urethra into the bladder are to be carried out. Gentleness is as important as before. The irrigating reservoir is no higher than for anterior irrigations. The patient lets the solution run into his bladder; it should not be forced in. His sphincter muscles will open if he will attempt to urinate against the solution. If they remain tight shut, wait for them to relax at the next visit or the next. The point is, never to force them.

It is not necessary to distend the bladder fully. Let the patient pass the solution out and repeat the procedure several times. Such irrigations are carried out at two day intervals until the voided urine contains only a few shreds. Prostatic massage is then combined with irrigations.

PROSTATIC MASSAGE

Here again gentleness must be your creed. The first massage is little more than a finger wave. The patient then empties his bladder of the contained solution to wash out of the urethra any expressed prostatic secretion. If this or any subsequent prostatic massage causes an urethral discharge which persists until the time of the next treatment the prostate must be left alone and irrigations continued until the urine is again clear or with a minimum of shreds. Otherwise the irrigations may be left off after the first two weeks of massage.

As the massages are continued the degree of pressure on the gland should be increased to moderate firmness. While disagreeable and uncomfortable, they should never cause real pain. Prostatic massages should be continued at intervals of two to three times weekly until the secretion obtained is free not only of gonococci but of pus. If pus remains you are not justified in assuming absence of gonorrhea organisms merely because they can not be found on stain or culture and you are not justified in proceding with any test of cure until after two to three months of regular, uninterrupted massage and removal of other foci.

It is an embarrassing evidence of the limitations of our knowledge that our criteria of cure of gonorrhea rests on the clumsy plan of trying to stir the disease into activity after we think it is cured. Yet this remains the most reliable method we know. Such tests should be started with the same enthusiasm that a burglar approaches a burglar alarm,

trying first the things least likely to cause trouble.

In infections which have apparently remained anterior, the prostate is massaged and its secretion studied to make sure that a possible asymptomatic posterior extension has not been overlooked. The posterior urethra is never involved without the prostate. A sound as large as the urethral meatus will permit is then passed only as far as the external sphincter, and the urethra massaged over it, particularly the floor and roof of the canal for it is here that the glands and crypts are located. Subsequent urine sediments and any resulting discharges are studied for the presence of the gonococcus. Such studies must be doubly careful when the sulfonamides have been used. This procedure should be repeated in about five days. Similar studies are made after the use of alcohol. Finally sexual excitement is permitted with adequate protection of the partner if intercourse is attempted. If the gonococcus can still not be found your patient may be dismissed on probation. Inform him that he is probably well. If he is looking forward to the resumption of sexual activity he must use a good condom for the next three months. If the disease has been an anteroposterior one, the same criteria of cure are used except that the sound is passed all the way to the bladder instead of just to the external sphincter.

USE OF VACCINES

I have not regularly made use of vaccines as criteria of cure and have no enthusiastic desire to recommend them to you. Recurrences which result from the breakdown in immunity which vaccines cause are vastly more difficult to overcome than are recurrences caused by any of the other tests of cure.

Unfortunately, complement fixation tests for gonorrhea have proven of little practical value even when carried out by laboratory workers especially experienced with them. They have generally been abandoned.

Recent notable developments in technique have made culture of the gonococcus a very reliable procedure. Cultures are now definitely more reliable than direct stains. It is greatly to be wished that culture facilities can become more generally available.

In presenting the treatment as I have, I realize that much has been of necessity overlooked. I have wished chiefly to emphasize principles.

I would summarize my remarks thus:

1. There are basic principles for the treament of gonorrhea.
2. They are as important as ever with the use of the sulfonamides.
3. The instructions you give your patient are the most important part of treatment.
4. Gentleness in your therapeutic procedures is an absolute necessity.
5. You must be prepared to see each case through to complete cure.

I know from distressing experience how puzzling a paper on this subject is to the listener. Treatment formally presented runs so smoothly and cases run so far from smoothly that there seems no valuable connection between the two. Yet any case, no matter how apparently singular, somewhere actually fits into the principles outlined and will respond to the measures suggested.

203 W. Second St.

Quinine Substitutes

An attack on the problem of finding quinine substitutes and synthetic agents for the treatment of malaria has been launched by the recently organized Committee on Chemotherapy of the Division of Chemistry and Chemical Technology of the National Research Council as part of the national preparedness program, a report on the origin and objects of the committee in the Medical Preparedness Section of *The Journal of the American Medical Association* for July 27 states.

The problem of finding newer and more economical drugs for the treatment of malaria is of great importance in view of the threat of the disease from South America, the report says. Moreover, it points out, "the world is practically dependent for its supply of quinine (the most effective drug yet found for malaria) on Java and the Kina Bureau (its selling agent) and might be cut off from this supply if Java should be seized by some other nation."

CLINICAL OBSERVATIONS IN THE TREATMENT OF GONORRHEA WITH SULFAPYRIDINE

By CHAS. A. HOFFMAN, M. D.
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2 PARA - AMINO - BENZENE - SULFONAMIDE PYRIDINE, known in this country as sulfapyridine and in Europe as M. & B. 693, was first introduced by Whitby and Fleming in the *Lancet* in the summer of 1938. There followed in swift succession numerous reports by both English and American workers which gave conclusive evidence that we had a remarkable new chemotherapeutic agent in the treatment of pneumonia. As the status of the drug in pneumonia became recognized, workers began investigating its usefulness in other fields, and in 1939 several articles were published on the treatment of gonorrhea with sulfapyridine.

A brief review of the literature revealed the following interesting data: V. E. Lloyd and his associate at Guy's Hospital, London, reported that they had used sulfapyridine in 250 cases of gonorrhea, and concluded that the results are superior to those obtained with sulfanilamide and other sulfonamide preparations, and that the employment of this compound immediately upon diagnosis leads to rapid cessation of symptoms and almost complete absence of complication due to extension of the disease. They stated that although minor toxic effects are common, serious manifestations are rare.

Results of 102 cases at Royal Infirmary, Edinburgh, are reported on by R. C. L. Batchelor and his associates. They used no local treatment, and the results indicated over 91 per cent of apparent cures. They stressed the lack of complications if treatment is instituted early in the disease.

At Venereal Disease Centre, Glasgow, 100 cases of gonorrhea were treated with 19 gms. each over a period of seven days, with additional local treatment for three weeks, with 95 per cent apparently cured at the end of this period. Epididymitis in one patient was the only gross complication. There were four cases of possible relapse, but one was probably a reinfection.

F. J. T. Bowie reported 93 per cent cures in 127 cases at Aberdeen Public Health Service. They stressed the advantage of early initiation of the treatment, pointing out the absence of complications in cases so treated.

Krestjansen reported 65 cures on 74 patients treated at the Rudolph Berg Hospital. The 16 women treated were all cured in a week.

E. N. Cook and E. B. Sutton reported on 18 cases treated at the Mayo Clinic with all cases apparently cured in six weeks. Twelve of the 18 cases were considered acute and the remainder chronic. One case, when seen, had a positive urethral discharge after five years of treatment.

James Sommerville reported 90 per cent cures in 152 cases at the Glasgow Venereal Disease Centre. Those that responded had apparent cures on an average of under five days.

In practically all the cases reported workers had used from 15 to 20 gms. of the drug a week, and they all agreed that it was of no value to repeat the drug in those that did not respond during the first week of treatment.

I would like to report the clinical results on 61 cases of gonorrhea treated with sulfapyridine. Most of these cases were seen daily at our office in Huntington. A certain number

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were seen in my office in Ironton, Ohio, and these cases were seen twice a week so as to better evaluate the results. I have grouped them as to chronicity, dosage of drug given, and whether they were seen daily or semi-weekly. All patients were, when first seen, given some form of local treatment.

All patients seen within one week following onset of symptoms without treatment, were considered acute, and all others chronic. In order to appreciate the results, one must keep in mind that all of these chronic cases had had sulfanilamide previously, either self-administered, given by other physicians, or in our office.

GROUP NO. I

Of the thirteen patients seen semi-weekly, in the No. I Group, ten were acute, and three were chronic. The three chronic cases responded to one course of 10 gms. of sulfapyridine given in 0.5 gm. doses over a period of five days. Of the ten acute cases in this group, nine were apparently cured with one course of treatment, but one still had a positive discharge and the following week he had developed an early epididymitis and, at his own insistence, was given fever therapy which resulted in a cure. This same man had a similar infection a year ago, which did not respond to several courses of sulfanilamide, and at that time developed an epididymitis. He was cured with fever therapy at that time. The fact that this same man on two different occasions developed an overwhelming infection in the face of an accepted chemotherapeutic treatment of value, gives support to the theory that specific body resistance plays a great part in our treatment of gonorrhea.

GROUP NO. II

The twenty-seven cases in No. II Group, were acute, and seen daily, at which time they were given local treatment. These patients were given four gms. of the drug daily in four one gm. doses for a period of four days. Of these twenty-seven cases, nineteen were apparently improved at the end of one week, and four others, although improved at the end of one week, suffered a relapse during the second week at which time they were given another course of sulfapyridine with apparent cures. Two of the other cases, deevloped a posterior infection, one of which continued on into epididymitis, and both were eventually cured by fever therapy. Another case after two weeks of treatment continued to have symptoms, and requested fever therapy which was given with an apparent cure.

In No. III Group, we have 15 cases which we shall consider chronic, some of which have had a known infection for several months. Of these 15 cases, eight were apparently

GROUP I

(Dose) Given two grams of sulfapyridine daily in four doses for five days. Male: Seen semi-weekly.

Patients	End of First Wk.	End of Second Wk.	End of Fourth Wk.	End of Sixth Wk.	Remarks
Nine acute patients	Clear	Clear	Clear	Clear	No reaction.
J. H.	Discharge present	Beginning epididymitis; given fever therapy.	Clear	Clear	Cured with fever at end of third week
Three chronic patients	Clear	Clear	Clear	Clear	No reaction.

GROUP II

(Acute)

(Dose) Given four grams of sulfapyridine daily in one gm. doses for four days. Male: Seen daily.

Patients	End of First Wk.	End of Second Wk.	End of Fourth Wk.	End of Sixth Wk.	Remarks
Nineteen patients	Clear	Clear	Clear	Clear	No reaction.
W. W.....	Clear	Did not return.			
C. R.....	No discharge; first glass cloudy.	Second course given.	Clear	Clear	No reaction.
W. R.....	Slight discharge.	Second course given.	Clear	Clear	No reaction.
W. S.....	Clear	Discharge recurred; given second course.	Clear	Clear	No reaction.
P. W.....	Clear	Cloudy urine; given second course.	Clear	Clear	No reaction.
R. C.....	Discharge positive.	Thru & thru infection.	Epididymitis developing.	Thru & thru infection.	Cured with fever therapy.
R. T.....	Discharge positive.	Improved	Given second course.	Thru & thru infection.	Cured with fever therapy.
R. B.....	Was first given sulfanilamide and developed a thru and thru infection within a week with a left epididymitis. Given four fever therapy treatments with no results. Epididymectomy followed by six months treatment including neolactonese, sulfanilamide, sulfapyridine—cured with fever therapy at end of six months.				

cured after one week of treatment, and two others, although improved on the drug, did not clear up completely, but were cured at the end of two months on local treatment. One man responded to his second course of sulfapyridine after his urethral stricture had been dilated. One patient was improved but continued to have slight symptoms until given fever therapy at the end of six weeks.

THREE UNUSUAL CASES

In this group, we had three unusual cases: One patient, a fifty-seven year old white male, after receiving eight gms. of the drug developed a marked hemorrhagic purpura, with bleeding from the entire gum margin. When seen at the end of the second day of treatment, his urine was seemingly pure blood, and he had two small ulcerative lesions on his lip which bled profusely. He was hospitalized and the drug discontinued. His symptoms and signs rapidly subsided, and he was discharged in 15 days, apparently cured on his gonorrhea and reaction.

Another case in the group was a sixty-eight year old male with a large prostate and four ounces of cloudy residual urine. Treatment in this type of case is high unsatisfactory, and although he improved under sulfapyridine,

GROUP III

(Chronic)

(Dose) Given four grams of sulfapyridine daily in one gm. doses for four days. Male: Seen daily.

Patients	End of First Wk.	End of Second Wk.	End of Fourth Wk.	End of Sixth Wk.	Remarks
Seven patients.	Clear	Clear	Clear	Clear	No reaction.
W.	Clear	Clear	Clear	Clear	Treated self for three weeks with black capsules before seeing us.
H. J.	Cloudy	Clear	Clear	Clear	Cured at end of two months with local.
F. E.	Cloudy	Improved	Improved	Improved	Cured at end of two months with local treatment.
G. W.	No discharge; cloudy urine.	Improved	Slightly cloudy urine.	Improved, but urine still positive.	Cured at end of three months, but urine still cloudy.
B. C.	No discharge; cloudy urine.	Improved	Improved	Given fever therapy.	Cured with fever therapy.
J. Z.	Marked reaction—Hemorrhagic purpura after two days drug therapy. Symptoms subsided when drug was withdrawn.				Cured with local treatment.
R. C.	Stricture dilated; given course of sulfapyridine.	Cloudy urine.	Repeated sulfapyridine.	Clear	No reaction.

he continued to have gonococci in the urine for three months.

The last patient in this group was a young male who came to the office with an acute infection and was given sulfanilamide. He immediately developed a posterior infection and epididymitis. He was given four fever therapy treatments, at the end of which time, he had not improved, so we did a left epididymectomy. For the next four months, he was given prostatic massages, several courses of sulfapyridine and sulfanilamide. This treatment was even supplemented with neolacmanese and Corbus-Ferry filtrate injections, but he still continued to have a positive discharge. He was again given fever therapy which was successful.

In the fourth and last group are seven female patients treated with sulfapyridine and of these, five were acute. Four of these cases were seen daily and were given four gms. daily for four days, and three were seen semi-weekly and given two gms. daily for five days. Six of this group were apparently cured at the end of one week, and the other patient still had a positive discharge at the end of a week. A week later she was started on a second course of the drug, but on the second day developed marked nausea and vomiting, and the drug was discontinued.

GROUP IV

Patient	Dose	How often seen.	End of 1st Wk.	End of 2nd Wk.	End of 4th Wk.	End of 6th Wk.	Remarks
H. W.	2 grams daily for 5 days.	Daily	Clear	Clear	Clear	Clear	No reaction.
J. H.	2 grams daily for 5 days.	Semi-weekly	Clear	Positive discharge; repeated drug.	Positive	Cured on local treatment.	Markedly nauseated on second course.
Two patients . . .	2 grams daily for 5 days.	Semi-weekly	Clear	Clear	Clear	Clear	No reaction.
Three patients . . .	4 grams daily for 4 days.	Daily	Clear	Clear	Clear	Clear	No reaction.

She eventually was cured with local treatment. All these patients were on daily potassium permanganate douches. In checking over this list of seven cases, we find that we had only two marked reactions, one of hemorrhagic purpura, and the other of a gastric upset. Other reactions were so slight that I did not consider them worth reporting.

PERCENTAGE OF CURE

Of the 61 cases that we treated, we had fifty-one (or 83 per cent) cures which we believed we could attribute to sulfapyridine. When we consider that the chronic cases seen had already shown a lack of tissue resistance to the disease because of a failure to respond to other drugs, the percentage of cure should probably be higher. There are some workers of the opinion that sulfapyridine is more effective in chronic cases, because of the occasional return of symptoms following withdrawal of the drug. This may be true. It has been proven that sulfapyridine plays its rôle only as a bacteristatic agent, and most of us are convinced that tissue resistance plays a major part in conquering the gonococci. Why then, isn't it logical that we should have better results if we held off all chemotherapeutic treatment of the disease until the tissue has had sufficient time to build up its own defense mechanism. I do not think that we are sufficiently acquainted with the drug at this time to make a hard and fast rule on the advantages of early treatment. However, if we did postpone chemotherapeutic treatment, we would, in all probability, have a higher percentage of complications.

KIDNEY DAMAGE

Workers have proven that sulfapyridine in large doses may cause marked kidney damage. For this reason, we checked the urine in most patients for the appearance of albuminuria. With the exception of the patient who developed hemorrhagic purpura, none of those who were checked showed more than a trace of albumin, which we considered negative. I believe that in the dosage which we have used, the drug is reasonably safe. In comparing the results obtained from the two doses given, we find that we had 92 per cent apparent cures out of 13 cases seen twice a week and given smaller doses of 0.5 gm. four times a day for five days, while the forty-cases seen daily and given the larger dosage of four gms. daily for four days, responded satisfactorily in only 64 per cent of the cases.

While the series is too small for accurate

conclusions, it would appear that the smaller dosage is just as effective as the larger, and certainly should be less toxic. The results tend to disprove the general belief that daily local tretament is of utmost importance.

The six almost immediate cures of the seven women treated, without complications, indicate the great value of sulfapyridine in the treatment of gonorrhea in the female.

SUMMARY

1. Eighty-three per cent of a series of sixty-one cases treated were apparently cured with sulfapyridine.
2. Sulfapyridine is one of our most valuable chemotherapeutic agents in the treatment of gonorrhea.
3. Daily urinalyses should be done on all patients while taking the drug.
4. Reactions in comparison to the results are almost negligible.
5. Sulfapyridine is of marked value in the treatment of gonorrhea in the female.
6. Smaller doses of the drug are less toxic and apparently just as beneficial as the larger doses.
7. Daily local treatment is not essential for good results in the treatment of gonorrhea with sulfapyridine.

TRAUMATIC HERNIA OF THE DIAPHRAGM WITH COMPLICATIONS

(Case Report)

By LEWELL S. KING, M. D.
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THE patient had been caught in a fall of slate at 12:20 p. m. in a coal mine. He was brought to the x-ray room at 2:15 p. m. complaining of pain in the back, chest and legs.

On rapid general examination the following findings were noted: Extensive bruises on the right cheek and swelling of the right eyelid; pulse 120 and of fair volume; blood pressure 130-90; respiration rapid and labored; left anterolateral aspect of the chest flat, apparently due to several broken ribs; hyperresonance in the left chest and no breath sounds heard from the level of the second rib downward on the left; right leg above the ankle contused and tender laterally; left leg swollen in the neighborhood of the knee; tenderness along the spine in the sacrolumbar area.

Impressions were: Traumatic pneumothorax; fracture of the right fibula; fracture of the left fibula; probable compression fracture of the lumbar spine.

Röentgenograms taken immediately revealed compression fracture of the third lumbar vertebra (Fig. 3), fracture of the left fibula, fracture of the right fibula, multiple fractures of the ribs (sixth, seventh, eighth and ninth ribs on the left), and herniation of the stomach through a defect in the left diaphragm (Fig. 1).

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The respiratory rate was rapid (38 to 44) and very labored. Dyspnea was increasing so markedly that it was considered advisable to evacuate the air from the dilated stomach in the left chest. A nasal tube was passed and an attempt was made to evacuate the air through it, but we were unable to cause the tube to enter the herniated portion of the stomach. Believing that immediate removal of the air was necessary, a needle was introduced into the stomach under fluoroscopic

control and the air was aspirated without difficulty (Fig. 2). The respiratory rate dropped at once to less than 30 and became much less labored. The patient was taken to his room. He was then placed on a special Bradford frame of the revolving type as originally described by Stryker.[1] Wangensteen suction was instituted. Normal saline with five per cent dextrose was given intravenously. Morphine was used to control pain. The patient was passing his urine voluntarily and showed no evidence of cord damage.

By the evening of the next day, the patient began to cough and expectorate clear fluid; the respiration was becoming more labored, and the pulse rate was 130. By afternoon of the second day the cough was almost constant. He was again taken to the x-ray room, and this time a nasal tube was successfully manipulated into the herniated portion of the stomach and the air was again evacuated, relieving the respiratory distress (Fig. 4). Coughing, however, continued and it was considered advisable not to delay operation further. He had by this time received intravenously 5,000 c.c. of normal saline with five per cent dextrose.

Positive pressure, nitrous oxide-oxygen-ether anesthesia was maintained by means of an intratracheal catheter. A left subcostal incision was used and upon exploration the spleen and the greater part of the stomach were found in the left chest, the stomach being partially engaged in a rounded hole in the dome of the left diaphragm. This opening measured about six by eight cms. A finger was inserted in the opening and gentle traction was made, allowing an inrush of air into the thorax, thereby breaking the negative pressure. After this the stomach and spleen were gently reduced into the abdomen. The defect in the diaphragm was closed with interrupted sutures of black silk. The gastric distension had been partially reduced during this maneuver by means of the Levine tube which was already in place. Further gas and liquid were removed from the stomach following its reduction into the abdomen. The abdomen was closed in layers. The patient's immediate postoperative condition was good, the pulse being 110 and the respiration 20.

The evening following the operation 500 c.c. of citrated blood was given intravenously. The Levine tube was kept in place, but allowed to aspirate only intermittently. By the following morning, the temperature had risen to 103.6 per rectum. The pulse was 130 and the respiration was 28. During the next

Fig. 1. 12-6-39—Traumatic herniation of the stomach through the left diaphragm. The viscus reaches the level of the sixth rib posteriorly. The heart is displaced to the right.

Fig 2. 12-6-39—The gas has been removed from the dilated stomach by aspiration with a small gauge needle. The hernia is unreduced, however. A Levine tube is seen. At this time it could not be manipulated into the herniated portion of the stomach.

Fig. 3. 12-6-39—Compression fracture of the third lumbar vertebra. The anterior body measured two cm. on the projection. The anterior body above and below measured four cm.

48 hours, the temperature remained above 102 rectally and the patient showed some respiratory distress. On examination, the left chest revealed evidence of fluid and was therefore aspirated, 550 c.c. of bloody fluid being obtained.

The next five days the patient's temperature varied from 99 to 102.4 but was gradually subsiding along with the pulse. On the morning of December 10, the patient asked for his breakfast, but was still receiving only tap water by mouth and intravenous saline and glucose. The bowels were moving normally and there was no distension. The patient was still coughing and expectorating a rather thick, yellow mucus. A röentgenogram of the chest was made (Fig. 5).

On December 11 we began turning the patient every four hours on the special revolving Bradford frame (Figures 10 and 11), gradually increasing the time that the patient was left on the abdomen. Also, active exercises of the arms and legs were begun. On December 12, the patient began to take liquids and hard candy and was allowed to chew steak. On December 13, a soft diet was allowed and was well tolerated. On December 16, the patient was continuing to cough up some mucus, but the cough was gradually improving.

On December 19, all sutures were removed and considerable swelling of the wound was noted. On insertion of forceps, a quantity of pus was released which was apparently localized between the skin and the deep fascia. This pus was smeared and cultured and revealed staphylococcus albus as the predominant organism.

On December 22, another röentgenogram of the chest was made (Fig. 6). The dressings were changed as often as necessary and the wound was treated at intervals with powdered sulfanilamide.

On January 6, the chest was re-x-rayed (Fig. 7). On January 11, daily irradiation of the wound with ultra violet ray was begun. On January 28 a very small amount of thin drainage persisted, and the wound appeared to be healing satisfactorily. By February 3 the drainage had almost completely stopped. On February 16, the fracture of the third lumbar vertebra was re-x-rayed (Fig. 8). On February 17 the wound was considered sufficiently healed and a hyperextension plaster jacket was applied. The two-table technique of Watson-Jones was used, the plaster extending in front from the sternoclavicular joints above to the symphysis

Fig. 4. 12-8-39—The gas had reaccumulated in the herniated portion of the stomach but was aspirated this time by a Levine tube, which may be seen curving up through the rent in the diaphragm.

Fig. 5. 12-11-39—Result after replacement of the abdominal viscera and closure of the rent in the diaphragm. Compare with Fig. 1, noting that the heart has moved toward the left. There is considerable clouding and pleural reaction in the left chest.

Fig. 6. 12-22-39—The clouding and pleural reaction are clearing. The outline of the restored left diaphragm is plainly seen. (Roentgenograms made with patient on Bradford frame without the use of the Bucky-Potter diaphragm.)

pubis below. After the cast was sufficiently hardened, a window was cut over the wound for observation and dressings. Back exercises were begun in bed.

Fig. 7. 1-6-40—A later roentgenogram. The left diaphragm is lower and the appearance of the chest is approaching normal.

Fig. 8. 2-16-40—Reduction of the fracture of the third lumbar vertebra has been accomplished while the patient has been convalescing from operation in a revolving Bradford frame.

Fig. 9. 2-19-40—Reduced fracture of the third lumbar vertebra after application of hyperextension plaster jacket.

On February 19 the fractured vertebra was re-x-rayed in the plaster jacket (Fig. 9). The patient was gradually propped up higher in bed and on February 26 he was allowed to be up in a chair. On February 28, he was allowed to walk (Fig. 12). On March 8, the patient was dismissed from the hospital walking.

Fig. 10. The patient lying supine on the posterior Bradford frame. A dressing covers the operative wound. The upright spindles and wing nuts are for attaching the anterior frame.

Fig. 12. Patient standing in plaster hyperextension jacket, applied after abdominal wound was healed.

Fig. 11. After the anterior frame has been applied and securely bolted and strapped in place, the patient is turned on his abdomen while sandwiched between the frames. The posterior frame is then removed, leaving the entire posterior surface available for massage, etc.

COMMENT

The most important feature in the treatment of this case was the specially designed revolving Bradford frame (Figures 10 and 11). This apparatus consists of two Bradford frames that can be attached to a revolving mechanism which rests on the ordinary hospital bed. When the patient is lying supine on one of the frames, the other is placed on top of the patient and pressed down, then securely bolted and strapped in place. The two frames may then be turned as a unit, with

the patient sandwiched between, the turning being accomplished without in any way disturbing a fracture of the spine. After the patient has been turned on the abdomen, the top frame is removed, making the entire posterior of the patient available for massage, etc. (Fig. 11).

It seems entirely unlikely that this patient, with his very extensive injuries, and an operation involving the invasion of the left chest cavity, could have escaped hypostasis, atelectasis, or other serious postoperative complication, if his spinal fracture had been treated by the use of the supine position or hyperextension in the supine position. The operation of necessity prevented the early application of a hyperextension jacket. The treatment of the fracture was not deterred in any way by the prolonged stay on the Bradford frame, as röentgenograms revealed the fracture satisfactorily reduced while being treated on the Bradford frame before application of the hyperextension plaster jacket (Fig. 8).

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CARE OF THE PREMATURE INFANT

By THOMAS W. NALE, M. D.
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A CONSERVATIVE estimate of the number of infants born who are premature has been slightly more than four per cent. For example, in Chicago slightly more than four per cent of the 97,000 infants born alive in 1936 and 1937 were reported to be premature. Out of 42,439 live births reported for 1938 in West Virginia, 1,053 or 2.5 per cent were reported as being premature. If we take the usual index of four per cent which is used by authorities on the subject this number should have been 1,698 instead of 1,053. It is conservative to say that at least 1,600 premature infants are born each year in West Virginia.

The standard measure of 2500 grams (five and one-half pounds) or less has been used for determining the need of special care for the premature. It is true that infants weighing at birth less than 1000 grams (2.2 pounds) rarely survive. Since weight in itself is not an exact measure of maturity, this criterion should not be used alone to judge viability. Dr. Hoffman of Chicago reported the case of a premature that weighed 735 grams (1.6 pounds) and lived.

THE AUTHOR

Dr. Thomas Nale, graduate of Jefferson Medical College, later took two years in obstetrics at the Elizabeth Steele Magee Hospital, Pittsburgh. Director of the Bureau of Infant and Maternal Welfare, State Health Department of West Virginia.

It is well to think of the premature infant as follows:

1. Premature as to time or being, in other words, normal for their fetal age.
2. Premature as to time but also suffering from pathological changes.
3. Developmental prematures who are full term as to fetal age but are poorly developed, etc.

What are the factors that contribute to the frequency of premature labors? This can be reviewed from a report on the "Obstetric Factors in Premature Births," by Dr. A. J. Mauzey, published in the February, 1940, issue of the *American Journal of Obstetrics and Gynecology*. This study was made on some 765 premature labors out of 10,797 labors that occurred in the hospitals of the

University of Illinois College of Medicine. Of this number of 765 premature labors there were 50 twin births and two triplet births, therefore, 819 premature infants resulted from 765 premature labors. The probable cause of prematurity was found in 434 labors. Many of these cases presented more than one cause but the major single causes of prematurity were as follows:

Premature detachment of placenta	8.7%
Eclamptogenic toxemia	24.9%
Syphilis	8.3%
Multiple pregnancy	7.3%
Habitual abortion	3.4%
Nephritic toxemia	2.9%
Heart disease	2.3%
Pyelitis	1.4%

To present the birth weight as a prognosticative factor Dr. Mauzey found:

Weight Group— 400-1000 gms.	(60)	93.3%	Mortality
Weight Group—1000-1500 gms.	(71)	81.7%	Mortality
Weight Group—1500-2000 gms.	(170)	32.9%	Mortality
Weight Group—2000-2500 gms.	(518)	9.1%	Mortality
Gross mortality of entire series of 819 premature infants		26.3%	

As the incidence of abnormal positions are greater in the premature, this is a factor that increases the mortality rate among prematures. This factor further influences the factor of operative intervention which in turn carries with it an increase in the mortality rate. For example, Dr. Mauzey found that cesarean section in his series carried with it a mortality rate of 21 per cent for the premature infant.

The proper management of the premature labor is a very important factor in saving the lives of prematures. Due to the lack of development of the cranial vault, prematures are very prone to have intracranial hemorrhages. The injudicious use of pituitrin increases this hazard. The length of the second stage of labor should be reduced by early episiotomy to prevent too much pressure on the head. As prematures are much more susceptible to narcotics, analgesics and anesthesias, their use should be minimized in the premature labor.

Place of birth is a factor in the mortality of the premature. For example, in a study of 862 cases by Dr. Julius Hess it was found that 510 were born in the home with a mortality of 24.5 per cent; 352 were born in the hospital with a mortality of 22.5 per cent.

CARE OF THE PREMATURE

Proper care of the premature begins with proper care of the mother before the birth of the infant. Proper prenatal care should materially reduce the incidence of premature births. Proper care at the time of the premature labor should increase the rate of survival.

Thirty years ago Rommel enumerated three cardinal principles for the care of the premature, namely: (1) Maintenance of body temperature, (2) proper feeding, (3) protection from infection. These cardinal principles are still generally accepted but unfortunately they are far from being generally applied.

If the hospital is properly equipped to take care of these prematures, supplying these three cardinal principles, it is the proper place for care of the premature. If this is not possible then many of the prematures would be better off in the home, providing special facilities can be supplied.

The care of the premature should begin as soon as it is born; on the confinement bed itself. If a premature birth is anticipated a heated bed and warm bed clothes should be ready before the birth of the infant. As soon as it is born any accumulated secretions or aspirated material must be removed by inversion of the child and if necessary by tracheal aspirations by means of a tracheal catheter.

The mucous should be cleaned from its nose and mouth, care being used not to injure the mucous membranes of the mouth for fear of providing a portal of entry for infection. The infant should be immediately covered with warm blankets, etc., to minimize the heat loss of its body. Much caution must be exercised to prevent the infant getting into contact with hot water bottles, electric heating pads, etc., as these infants are easily burned and such burns are usually fatal.

As these infants frequently present evidence of asphyxia, they must be carefully watched. Gentle artificial respiration should

be instituted if necessary at the rate of 20 per minute. A mixture of 95 per cent oxygen and five per cent CO^2 mixture is beneficial if this gas is available. Breathing exhaled air directly into the mouth of the infant can be performed in an emergency. Careless handling and traumatizing the infant or too rapid performance of artificial respiration is productive of more harm than good and must be avoided.

Again it must be emphasized that preservation of body heat must be begun immediately after birth on the confinement bed itself. In the small premature, for temporary emergency, use a sterile cotton pack which completely envelops the infant except for the fore and genitoanal region. An improvised jacket of flannel may be placed on the outside of the cotton to hold it in place.

An easily changed small pad of cotton or gauze may be applied to the cord, genital region and anus. Whenever these become soiled then it is necessary to change only the pad.

The following list of clothing for the larger or older premature is recommended by Dr. Hess:

Four bands, 12 inches long and four inches wide (flannel or knit wool).

Four undershirts with blind sleeves and drawstring at the neck (flannel).

Four overshirts of flannel.

Four pinning shirts.

Two bags with hoods 30 inches long and 20 inches wide.

Four pairs of woolen stockings.

Two dozen diapers—18 by 20 inches (fine birdseye).

Small genital pads.

CARE OF THE SKIN AND GENITALIA

If the premature is small or weak it should not be bathed even with warm liquid petrolatum or olive oil. Studies made in recent years have resulted in the practice of not bathing any infant for several days after birth. It has been found that the vernix caseosa which often covers the skin of the newborn is a protective coating. If this material is left on the skin, after a period of several days, it peels off leaving the skin clean and pink and free of irritation. The incidence of skin infections, such as impetigo, among such infants is greatly decreased.

No infant weighing less than 1500 grams should be bathed. The preferable method of bathing is by use of warm oil. The genitalia should be cleansed with sterile water when necessary, being careful not to traumatize the tissues. This is also true of the anal region.

DAILY ROUTINE

As these infants' heat control centers are not as well developed as in the full term infant, fluctuations of body temperature are more marked. The body temperature must be taken by rectum and should be recorded morning and evening. A minimum of 97° F. should be considered the lowest temperature compatible with progress. Attempts should be made to limit daily fluctuations to one and one-half degrees F. Subnormal temperatures are more common in smaller, low-weight infants. If too vigorous attempts are made to raise the body temperature, overheating may result with excessive loss of body fluids in the presence of a limited fluid intake. A dehydration hyperpyrexia must be constantly kept in mind which often necessitates subcutaneous fluids, fluids by rectum, etc. The temperature of the heated bed should be varied with the needs of the individual infant. Small prematures and congenital weaklings should have a surrounding temperature varying from 85 to 95° F. Older, stronger infants are better placed in a bed at 75 to 85° F. As the infant develops, its vital functions and subcutaneous fat increase, so the temperature of the bed should be gradually lowered to 75° F.

Removal of the infant from the bed should only follow definite indications. Changing pads or napkins and the ordinary routine measures can be carried out in the bed.

The diet of the premature naturally varies with the degree of prematurity. Each premature will have to be individualized. Nevertheless, certain cardinal points are essential for the diet of the premature; namely,

mother's milk and an abundance of fluids.

If the small premature is unable to take sufficient fluids, it will be necessary for the physician in charge to administer normal saline solution subcutaneously or intraperitoneally. This can be accomplished by using a 10 or 20 c.c. syringe and a suitable needle. In the event it needs additional nutritional elements, the premature can be given a boost by the injection of five to twenty c.c. of whole blood subcutaneously. The mother or father may be used as a donor and there is no necessity of typing the blood when it is given this way. It is surprising how such a measure will often give the debilitated premature the start that it needs.

The time at which it is safe to begin to give water and milk to a premature baby depends upon its size and vigor. Some authorities believe that in the feeble baby, water should be withheld as long as 12 hours and then it should be given in small amounts with a medicine dropper every three or four hours. For the vigorous premature, water may be started when it is six to eight hours old.

AMOUNT OF MILK AND WATER

The average premature needs daily a total amount of fluid (milk and water) equal to one-sixth to one-seventh of its body weight in pounds. For example, a baby which weighs three pounds will need daily one-sixth of three pounds or one-half pound of fluid. As one pound equals 16 ounces, it will need eight ounces of fluid during each 24 hours. Two ounces of this quantity should be water and six ounces of mother's milk or formula. Such quantities often cannot be given the premature during the first few days of life. It is fortunate if the average premature takes one-eighth of its total weight in fluids by the fourth day.

It is needless to emphasize that all water must be boiled and sterile. Breast milk even if only an ounce or two should be obtained for the infant. Any breast milk, save the premature baby's own mother's, should be cooked in a double boiler for ten minutes.

The mother's breast should be pumped every three to four hours after delivery. Manual expression of the breasts may be more beneficial than the use of the breast pump. Such measures stimulate the milk supply and encourage the mother in her effort to produce milk for the future use of the infant. All milk obtained from the mother should be collected in sterile containers and the prescribed amount fed to the infant.

METHODS OF FEEDING

There are several methods of feeding the premature. We have mentioned the giving of normal saline solution or whole blood subcutaneously.

(1) Catheter Feeding (gavage). This is the most simple and best method of procedure in smaller infants, and must be carefully practiced by an experienced nurse. It is especially indicated in the premature that shows signs of fatigue or cyanosis. A catheter (No. 12 French, No. 8 American or No. 5 English) about 14 inches in length may be attached to the glass barrel of a small syringe. The catheter is passed through the esophagus into the stomach and the measured amount of milk is permitted to run slowly into the stomach. Two or three minutes should be consumed in injecting the milk into the stomach.

(2) A medicine dropper may be used successfully in most cases. The food should be administered very slowly.

(3) The Breck Feeder: This feeder consists of a glass cylinder which has a small nipple on one end and a rubber bulb on the other. By placing the nipple in the infant's mouth and pressing on the rubber bulb small quantities of milk can be injected slowly into the infant's mouth. This feeder has the disadvantage of a tendency to too rapid feeding if not properly controlled.

(4) Nursing From a Bottle: For this purpose nipples with a small bulb are used. At times a rubber bulb from a medicine dropper may be used, if it is of good quality, by perforating it for nipple purposes. A one or two ounce medicine bottle may be used.

(5) A rather slow but satisfactory method

of feeding the infant is by expressing the milk directly from the nipple into the infant's mouth during the feeding period. This is practiced to advantage when teaching the infant to take the breast.

(6) Large vigorous prematures may be put directly to the breast when they are six to eight hours old.

Smaller hand-fed infants should be fed at two hour intervals during the day and three hour intervals at night, a total of 10 feedings in 24 hours. Larger infants are fed at three hour intervals. When catheter feeding is the method of choice, even in the smaller infant six to eight feedings are usually the maximal number needed in 24 hours.

Four points must be kept in mind in feeding the premature:

1. There must be a definite idea of the minimal food requirements for life. (This means 70 calories per kg. every 24 hours and one-seventh of the body weight in fluids).

2. The amount of food necessary to maintain at least a stationary weight must be given.

3. The amount of food needed to meet requirements for growth and development must be given. (100 to 110 calories per kg. every 24 hours).

4. Overfeeding either through too rapid administration, too large individual feedings, or too rapid increase in the day's food should be as conscientiously avoided as underfeeding.

VITAMINS

Rapid growth of the prematures makes them prone to develop evidences of vitamin D deficiency, and in order to prevent rickets in a premature infant it may be necessary to give 1000, 5000, or even 10,000 units of vitamin D a day. As small debilitated infants are likely to aspirate oil into their lungs it is better to use a concentrated preparation of known vitamin D potency in a non-oil mixture.

Orange juice in quantities of one-half teaspoonful can be started when the infant is two weeks old, if it is doing well. This orange juice should be added to an equal quantity of boiled water. As prematures have a tendency to develop anemias it is important to begin anti-anemic therapy shortly after birth.

PROTECTION FROM INFECTION

Premature babies have very little resistance to disease. They are particularly subject to infections, especially colds. A cold is a serious infection for the premature as it is likely to develop into pneumonia. Colds, ear infections and pneumonia are common causes of death in premature babies. Whoever cares for the premature should carefully wash their hands before touching him. They should also wear masks. Visitors, especially young children, should never be permitted in the room where a premature baby is kept.

WEST VIRGINIA'S MORTALITY FROM PREMATURITY

Year	No. of Births	No. Rep. Prematures	No. of Prem. Deaths	Death Rate
1934	41,509		734	17.9
1935	41,775		716	19.3
1936	40.855		699	17.1
1937	42,246		740	17.5
1938	42,439	1,053 (2.5%)	671	15.8
1939 (1st 6 mo.)	18,156	518 (2.8%)	306	16.6

Death rates based on number of deaths per 1,000 live births.

In the spring of 1938 the Division of Maternal and Child Hygiene of the West Virginia State Health Department had 26 incubator boxes built for premature infants. These were distributed to full-time county health departments throughout the state. At present fifteen additional boxes are being built and will be distributed.

These incubators are installed at local health departments. When the health department receives a call from a physician that he has delivered a premature, the incubator is delivered to the home and loaned to the family free of charge. The public health nurse visits the home and instructs the mother and attendant regarding the nursing care of the premature.

Many reports have been received by the State Health Department that these incubator boxes are very satisfactory. They are not intended to take the place of more elaborate incubator equipment such as is found in hospitals. These boxes are used in the homes of families who cannot afford to pay for hospitalization. Reports were received of these

boxes being used in over fifty cases during the calendar year of 1939.

When more attention is focused on the care of the premature by the medical, nursing and public health groups throughout West Virginia, we shall see a marked reduction in the number of deaths due to prematurity.

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THE SIGNIFICANCE OF ELECTROCARDIOGRAPHY IN GENERAL PRACTICE*

By S. M. JACOBSON, M. D.
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WE are called to see a patient, a known hypertensive who has been aroused from his sleep by a severe pain in the center of his chest over the sternum, which he describes as terrible, crushing, squeezing in character. The pain radiates to his shoulders and arms. He is pale, ashen gray, his skin is cold and moist. He looks as if he is in shock. His heart sounds, on examination, sound distant. His blood pressure has fallen to 110 systolic from a known 170. His pulse is 100 to 120. The next day his temperature rectally may be up to 101° F. A blood count if taken will show a leucocytosis of 15,000 to 20,000.

That man obviously had a coronary attack —a thrombosis.

On questioning we learn that for several days he "had been feeling funny," was more dyspneic than usual, had some pain over the precordium.

On following this case we may note that he develops a friction rub and the place where it is heard will depend on the location of the infarcted area; that he may develop transient auricular fibrillation, a heart block, or even an Adams-Stokes syndrome. He may have an oliguria or a glycosuria if he is a diabetic.

Cases of this type, although difficult to handle at times, are comparatively easy to diagnose.

But suppose the pain in this patient had not been in his chest but in his epigastrium and had radiated to the upper midback and resembled an acute surgical condition, a gallstone colic, a perforated peptic ulcer, an acute pancreatitis! Suppose there had been no drop in blood pressure, fever or leucocytosis, as often happens! Suppose there had been very little pain, just weakness, and the patient had continued his work!

Then our diagnostic acumen would be put to a severe test. It is in conditions of this type that electrocardiography is valuable.

Definite changes take place in the ventricular complexes and the location of the infarcted area may be predicted in most instances. Injuries to the anterior part of the heart generally occurring in the lower lateral portion of the left ventricle near the apex and resulting from a thrombosis of the descending branch of the left coronary artery produce one type of electrocardiogram. Similar injury to the posterior part of the ventricle resulting either from a thrombosis of the circumflex branch of the left coronary artery or of the right coronary artery produces a different set of changes. We can even suspect months or years after an attack that one had previously taken place.

THE AUTHOR

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*Read before the Potomac Valley Medical Society at Keyser, April 30, 1940.

The same situation may prevail in borderline or early cases of rheumatic fever. A typical case of rheumatic fever beginning abruptly or even insidiously following a sore throat or an acute tonsillitis, with moderate fever, perspiration, anemia, and migrating joint pains or a typical migrating polyarthritis with typical cardiac involvement and valvular disease is easy to diagnose but in the atypical case where one has to delve into the family history for clues, where there is repeated epistaxis or vomiting, a feeling of listlessness and fatigue, sweats or anemia and vague repeated abdominal pains which on examination resemble a mild or chronic appendicitis is where electrocardiography may give us our guiding clue. For in rheumatic fever many patients show an increased conduction time between the auricles and ventricles known as an increase in the P-R interval.

Now please do not let me create the wrong impression. Electrocardiography has become an essential part of the examination of the heart. It has improved the diagnosis, prognosis and treatment of heart disease. We can recognize and treat conditions of the heart now more intelligently than the most experienced physician a generation ago. But this does not mean that electrocardiography has taken the place of older and simpler methods of clinical examination. The information that we obtain must be used as part of the chain of data in any particular case just as with other laboratory procedures.

ACCOMPLISHMENTS OF ELECTROCARDIOGRAPHY

Several things that electrocardiography has done are:

(1) It has clarified all the irregularities of the heart beat. It is not enough now for a physician to say that a heart is "slightly irregular or less irregular." He must add the type of irregularity.

(2) It has thrown a great deal of light on diseases of the coronary arteries and myocardial infarction.

(3) Occasionally it aids in the more accurate diagnosis of valvular disease.

(4) In certain cases it aids in directing proper drug therapy.

The apparatus used to make an electrocardiogram is complicated but the principle is comparatively simple. The human heart like all contracting muscles produces an electric current (an electromotive force). This spreads through the body which is a conductor and thence to the apparatus. A fine string of silver or platinized quartz filament is suspended between the poles of a powerful electromagnet. It has long been known that if an electrical conductor is placed in a magnetic field and a current is passed through this conductor, it will move perpendicularly to the lines of force of the magnetic field. A light illuminates the movements of the string and a microscopic arrangement magnifies them. A timing device interrupts the light at fixed intervals giving us the time relations of various events and finally the shadow of the string is photographed by a camera.

USE OF ELECTRODES

Electrodes are placed on different parts of the body to take off the currents from the heart, two points being needed to complete each circuit.

When we use the right arm and the left arm we have lead one.

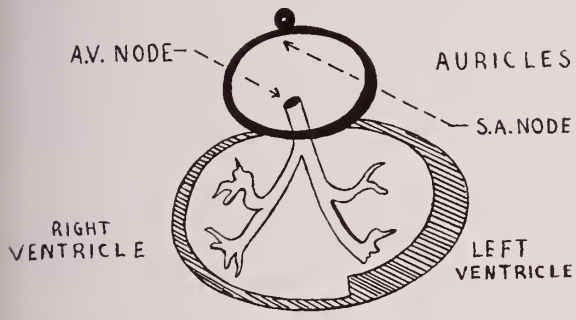
When we use the right arm and the left leg we have lead two.

When we use the left arm and the left leg we have lead three.

Now we also use a fourth lead in which one electrode is placed on the left leg or back and the other over a specific point on the chest over the precordium.

The normal impulse that initiates the heart beat begins at the sinoauricular node or pacemaker, which is a specialized bit of tissue at the junction of the superior vena cava and the left auricle. The wave spreads over both auricles and they contract simultaneously. As the wave spreads it eventually reaches the junctional tissue between the auricles and the ventricles. This structure is called the auriculoventricular node of Tawara and continues into the bundle of His. At the top of

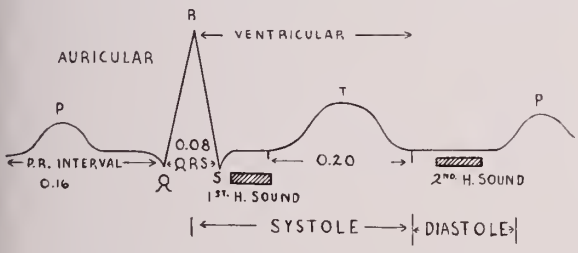
the interventricular septum it divides into two branches (right and left) extending down each side of the ventricular septum. This specialized conduction path continues with finer and finer arborizations called Purkinje



fibers and spreads throughout both ventricles to the endocardial surfaces of the heart. Both ventricles are stimulated to contract simultaneously.

When an electrocardiogram is taken of a normal individual it will show certain waves. These waves are all alike in all normal individuals within certain limitations.

I shall not burden you with the details except to indicate graphically their appearance.



Now, disturbances may occur in the heart which alter the normal formation or completion of the heart beat. Many of these we can recognize by the simple procedures of pulse examination and auscultation of the heart; some cannot be detected accurately without the electrocardiogram.

Disturbances of the S-A node or pacemaker such as normal tachycardia, normal bradycardia or sinus arrhythmia are simple to detect. But sinus pauses which results in the pacemaker's failing to produce impulses for varying lengths of time due to certain reflex influences and giving the patient syncopal attacks similar many times to Adams-Stokes disease is not easy to recognize. An electrocardiogram may guide one to proper therapy.

ECTOPIC RHYTHMS

Impulses can arise in other parts of the heart besides the pacemaker or S-A node, *i.e.*, the auricles, the junctional tissue or A-V node and the ventricles. These are called ectopic beats and when they occur they interfere with the regular sequence of events and produce characteristic pictures. When the heart beat travels through an abnormal course the electrocardiogram will be abnormal.

In the auricles we have a series of possible abnormalities in the beat. We may have ectopic beats called premature beats or auricular extrasystoles which may or may not indicate heart disease and many times can be recognized clinically.

A higher degree of disturbance is auricular tachycardia. Here instead of an occasional ectopic beat being sent out from the auricular wall the focus sends out a series of regular impulses. This may be maintained for hours, days, or weeks. A whole series of symptoms may be presented by the patient many times alarming in character and the underlying cause may many times be severe myocardial disease. The attack may even resemble a coronary attack. Treatment is usually effective in these cases, therefore, recognition is important. The electrocardiographic picture is characteristic.

A still higher degree of auricular disturbance is auricular flutter. The auricles in this condition beat at the rate 200 to 350, the ventricles at one-half or one-third that rate. The condition can only be detected by the electrocardiogram in which there is a peculiar but characteristic pattern. If these patients are given digitalis the impulses from the auricles to the ventricles are blocked and the ventricular rate may even be 75. Then one may not even suspect the condition.

The highest degree of auricular disturbance is called auricular fibrillation. Here the number of auricular impulses is very great, 400 and more. The impulses are so great and so frequent that only part of them are carried through to the ventricles. And the response to them in the ventricles is so ir-

regular that we get the typical pulse and heart action that we feel and hear: total irregularity in rate, rhythm, and force, and also a pulse deficit. When the pulse rate is slow and regular and we have a slow fibrillation then the electrocardiogram may be important because then we may think that we have a case of occasional extrasystoles.

Abnormal beats may arise in the auriculo-ventricular node (A-V node) or bundle of His. We can have occasional nodal beats or extrasystoles or the beat may be initiated here for variable lengths of time. Although this type of condition can only be recognized by graphic means it is of very little diagnostic significance.

VENTRICULAR

Ventricular extrasystoles are very common. We see them in normal individuals or in those having organic heart disease. Digitalis may be the cause and excitement, worry and anxiety may be the exciting factors. It is usually easy to detect a ventricular extrasystole but how can one tell always that the beat we feel and hear is not auricular in character? How do we know that the frequent so-called extrasysoles we are feeling at the pulse or hearing over the precordium are not really auricular fibrillations? In these questionable cases the electrocardiogram clarifies the situation readily. We can tell not only whether it is an auricular or ventricular extrasystole or a fibrillation, but from what ventricle (right or left) it has been initiated.

A still higher grade of ventricular ectopic rhythm is paroxysmal ventricular tachycardia. Although this condition may be purely functional in an otherwise normal heart, it usually accompanies grave heart disease, especially disease of the coronary artery. It may be paroxysmal or even permanent. May I add, although I have not mentioned anything of therapy thus far, that digitalis will make this type of case worse but that quinidine will help it. So you see that here also electrocardiography is obviously a great aid.

In the ventricles we see no condition comparable to auricular flutter described before, but we know that ventricular fibrillation does occur. It is usually the cause of instant death hence clinically one rarely sees this condition. Records are available where by chance an attack occurred while a tracing was being taken. This is what probably occurs in cases of instant death in patients with known coronary disease, and in such conditions as electrocution. Isolated records have also been recorded in individuals who have had repeated attacks of syncope.

Thus far we have considered abnormalities in the initiation of the heart beat from the normal pacemaker and from other sources such as the auricles, the A-V node and the ventricles. There may be abnormalities in conduction. The impulse initiated in the sino-auricular node may be blocked before it reaches the auricular musculature and a complete heart cycle is lost. This is called sino-auricular block. It is not very important and treatment is not indicated unless the abnormality produces syncope.

A-V BLOCK

The more common type of heart block is that which occurs in the junctional tissue at the A-V node or bundle of His. A slight defect causes a delay in the conduction but the impulse reaches the ventricles and no abnormality is detected in the physical examination. The conduction time or P-R interval from the auricles to the ventricles which is normally 0.16 seconds is prolonged and when it reaches 0.20 seconds it is arbitrarily regarded as pathologic and we have what we call first degree heart block. A-V heart block of any degree results from three main causes. Digitalis is the most common of all. Full doses of this drug may produce any degree of heart block, but especially a delayed conduction time. Rheumatic fever and diphtheria are second. Heart block rarely occurs in other infections. It is very common in rheumatic fever and as I indicated before it may be the only evidence of a rheumatic infection. Even if there are no rheumatic pains and there are no significant findings in the heart examination, this electrocardiographic

finding is regarded as positive evidence of rheumatic carditis. The third major cause of conduction defects is chronic organic heart disease, especially coronary artery sclerosis and less frequently, rheumatic valvular disease. Hyperthyroidism and occasionally syphilitic disease involving the junctional tissue are rare causes of heart block. First degree heart block is easily recognized in the electrocardiogram but it is practically impossible to recognize it clinically.

When the conduction time is increased the impulses from the auricles to the ventricles find it increasingly more difficult to pass through the junctional tissue until finally one is blocked. This is called partial heart block or second degree heart block. This may occur every five or six beats or twenty beats or every second beat and so on. This must be distinguished from extrasystoles and complete heart block and upon the correct diagnosis depends the correct treatment.

The highest degree of heart block occurs when the defect is sufficiently great to prevent all the impulses from reaching the ventricles. This is called complete or third degree heart block. Then the ventricles establish their own rhythm and the auricles and ventricles are dissociated from each other. The auricles may beat 80 or 90 times a minute and the ventricles 30 or 40 times. So long as the ventricles contract regularly, even at a rate of 28 or 30 there is no danger because the circulation may still be efficient. But the danger is when an attack of paroxysmal ventricular tachycardia supervenes or when the ventricular pacemaker decides to stop for a while. Then stertorous breathing sets in or convulsions occur or syncopal attacks and if the standstill is long enough—death ensues. This type of condition many times has to be distinguished from partial heart block. The electrocardiogram clearly demonstrates the dissociation of the auricles and ventricles and the rates of each.

BUNDLE BRANCH BLOCK

An impulse may begin in the normal sinoauricular node or pacemaker, go across the auricles, down the A-V node to the bundle of His and then be blocked either in the right or left main branch of the bundle. This condition is called bundle branch block, right or left. In such a block the beat will descend down the normal bundle and reach the affected one in a roundabout fashion. The ventricles continue to contract regularly and unless one keeps the condition constantly in mind and looks for the several signs indicative of it he will miss it each time. Even then it is extremely difficult to recognize the abnormality without an electrocardiogram. A gallop rhythm, a bifurcated or reduplicated pulse or a pulsus alternans in a hypertensive or coronary or old rheumatic heart patient should make one suspicious. When one discovers this in a patient it indicates severe myocardial disease and a poor prognosis as to life. Most cases live but a year or two after the discovery.

DELAYED IMPULSES

I should like to add that impulses may be delayed in either branch of the bundle of His without being blocked or they may be blocked in the finer branches of the Purkinje system. We include these under the term of intraventricular block. An electrocardiographic tracing will usually recognize these defects.

I shall not discuss coronary thrombosis and myocardial infarction any further because I began my paper with this important subject. But I do wish to mention that the most important contribution that electrocardiography has made to medicine has been in the diagnosis of coronary thrombosis and myocardial infarction.

There are many changes or alterations that take place in an electrocardiographic tracing indicative of myocardial disease, of dextrocardia, of preponderance of the right or left ventricle and so on which I shall not discuss. I might mention also that a great deal of experimental work is being done in other conditions and clinical data is being gathered. For instance we now have a definite pattern which occurs in acute pericarditis with effusion.

SUMMARY

(1) The exact rate of the auricles and ventricles from minute to minute under an emotional stress or strain may be recorded.

(2) The location of the pacemaker, especially when it migrates to the A-V node may be followed.

(3) The point of origin of premature contractions and paroxysmal tachycardias may be determined.

(4) The presence of the very lowest grade of A-V heart block is revealed. This is important as a diagnostic aid in acute rheumatic myocardial involvement when it otherwise could not be detected.

(5) The presence and grade of defective A-V conduction or bundle branch block are established.

(6) The evidences of myocardial changes due to digitalization or obstruction of the coronary flow and the progress of such conditions are best followed by serial electrocardiograms.

(7) We may record and determine the exact type of any rhythm disorder that may occur.

119 Bedford Street.

Mechanism In Concussion

The mechanism involved in concussion as recently demonstrated by W. W. Scott, M.D., Chicago, is explained in *The Journal of the American Medical Association* for July 6.

"In an attempt to elucidate certain aspects of the physiology of concussion," *The Journal* says, "Scott succeeded in demonstrating in dogs a method for recording changes in intracranial (within the skull) pressure produced by a blow to the head. As a result of these studies, Scott feels that loss of consciousness due to a blow on the head may possibly be explained on the basis of short lasting, complete cerebral anemia (lack of blood in the brain).

"A blow of sufficient force to cause unconsciousness results in a rise in intracranial pressure considerably above that of the systolic blood pressure (the pressure of the arteries at the time of the heart's contraction)." Such a rise in pressure would force the blood out of the brain."

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Bronchoscopy is a relatively new means of investigation in the diagnosis of tuberculosis. It is especially valuable for discovering tuberculosis of the tracheobronchial tree, a condition which, though described over a century ago, is still treated too casually. Two clinicians, associated with a sanatorium where bronchoscopy is a routine procedure point out its value and report their experiences. Abstracts of their article follow.

Bronchoscopy in Tuberculosis

Bronchoscopy is not contraindicated except in cases of (1) acute laryngeal tuberculosis; (2) recent extensive hemorrhage; (3) far advanced tuberculosis with toxemia and cachexia. Even these contraindications may be considered only relative in isolated cases. Bronchoscopy in the tuberculous is now an accepted procedure by many phthisiologists and bronchoscopists.

The indications for bronchoscopy have been listed (1) as a diagnostic procedure for differential diagnosis; (2) as a diagnostic study in proved cases of tuberculosis with certain signs and symptoms; (3) to assist in carrying out endobronchial procedures, such as the instillation of opaque media or for therapeutic purposes.

Tracheobronchial Tuberculosis

There are apparently two methods of the development of tuberculous tracheobronchial lesions; by continuity through direct extension from neighboring structures as through the lymphatics, and by the implantation of bacillary sputum on the mucosa. Several types of lesions have been observed, namely, (1) the diffuse and nodular mucosal or submucosal lesion, (2) ulcerative lesions, (3) fibrostenotic lesions, and various combinations of these.

A wide variation in incidence has been reported by various writers. One group of workers found tuberculous tracheobronchial lesions in 41 per cent of autopsies of tuberculous cases and another worker reports only 4.4 per cent tuberculous lesions in the major bronchi.

The development of the bronchoscope has stimulated the study of tuberculous tracheobronchitis in the living, not only from the diagnostic viewpoint, but also in relationship to pulmonary disease, as well as with regard to the therapy of the local lesion.

The symptoms of tracheobronchial tuberculosis are wheezing or asthmatoid attacks, paroxysmal attacks of intractable coughing with production of variable amounts of thick tenacious sputum at different intervals, dyspnea out of proportion to vital capacity with inspiratory stridor, cyanosis, constant clearing of the throat, persistently positive sputum in the absence of other evidence of pulmonary tuberculosis and intermittent atelectasis. It is apparent, in view of the experience of many and the recent extensive literature, that these cases should be bronchoscoped before any major surgical procedure for diagnostic reasons, as well as for therapeutic relief. It is also true that bronchoscopy should only be considered as a supplemental part of the complete examination of the patient. It also should be stressed that bronchoscopy should only be done by trained hands. A thorough knowledge of the anatomy of the structures involved is essential. It should be unnecessary to emphasize again that gentleness is of extreme importance, and that psychic as well as physical trauma of the patient must be avoided.

Authors' Experiences

After describing the bronchoscopic appearance of lesions, treatment procedures and other considerations discussed by various writers, the authors offer their own experiences. For the past two years all patients admitted to the Monterey County Sanatorium have been routinely studied by bronchoscopy, unless definitely contraindicated. Criteria were rigid and the findings of one observer were checked by the other. In a series of 53 cases definite tuberculous tracheobronchitis was found in 37 per cent. Nearly all of the lesions were early mucosal and submucosal and most showed definite visible tubercle formation. The majority were on the posterolateral and posteromedial walls of the main bronchi on the side of the pulmonary lesion. In only three of twenty definite cases were there symptoms. All cases have been treated by local applications of 30 per cent silver nitrate, and all but one case have shown improvement on repeated examination and treatment, with apparent definite healing in six. Healing has been interpreted by a flattened and normal appearing mucous membrane at the site of the previous lesion. In one other case a recurrence of the tracheobronchial ulceration occurred three months after there was apparently definite healing. Several cases with negative findings have been bronchoscoped, subsequent to collapse procedures, for check-up on persistently positive sputum and no bronchial lesion was found.

There were no complications attributable to bronchoscopy and no apparent ill effects in over 100 examinations. Patients accept bronchoscopy as a matter of routine. Carefully performed bronchoscopy is a relatively simple procedure which carries practically no risk, and yields a considerable amount of valuable information.

Summary and Conclusions

1. Tuberculous tracheobronchitis has an important bearing on the prognosis and treatment of pulmonary tuberculosis.

2. Advanced and progressive ulcerative or stenotic lesions are serious complications.

3. Little is known of the evolution of early lesions and this is extremely important if they become progressive.

4. Early lesions occur without the classical symptoms of obstructive lesions.

5. Bronchoscopy of the tuberculous, unless definitely contraindicated, is simple and practically harmless, when performed carefully and gently by trained workers, and complications are rare.

6. Bronchoscopy is a routine procedure in many institutions before certain major surgical procedures and is becoming more so.

7. It is suggested that more bronchoscopic examinations be done on patients in sanatoria, not only to enrich our knowledge of tracheobronchial tuberculosis, but also with the more important view of a more rational and better treatment of the patient.

8. There is no accepted method of treatment of tracheobronchial lesions, but 30 per cent silver nitrate locally applied seems to have some value, particularly in assisting in the healing of early lesions.

Routine Bronchoscopy in Tuberculosis by John C. Sharp and C. B. Gorham, Amer. Review of Tuber., Vol. XLI, No. 6, June, 1940.

There is no evidence to substantiate the impression that the milk-producing ability of women decreases with age, *Hygeia, The Health Magazine* declares. If the prospective mother can adjust her mental environment and decide that she is going to nurse her baby, she probably will in spite of her age.

President's Page

The joint meeting with the Medical Society of Virginia is now history. I believe it can safely be said that this meeting was one of the outstanding events in all of the seventy-three years of our Association's existence. We hope that perhaps in the next five or ten years this joint meeting will be renewed.

Not only did our reunion with our Virginia confreres make history, but the reports of our Association committees at White Sulphur, and the actions of the House of Delegates which followed, will also mark our 1940 session as one of vast importance. In the face of government monopoly charges against the American Medical Association, our Medical Service Committee gave a convincing and courageous account of its activities. Our Committee on Postgraduate Clinical Studies has offered us a five year program of postgraduate education that would be outstanding for a state twice the size of West Virginia. Our Legislative Committee has presented much food for thought in our 1941 legislative program. We urge all of our members to read the committee reports in this issue of the JOURNAL. A perusal of these reports is convincing testimony that our Association is serving an active and useful purpose.

Once more let me commend our good professional brothers from the Old Dominion for their hearty spirit of friendliness and camaraderie which contributed so largely to the success of our White Sulphur Springs meeting. May I also express my profound gratitude to all of our committees and individuals who worked so diligently and so successfully in making our seventy-third annual meeting such an outstanding event.

Frank V. Langfitt
President.

West Virginia Medical Journal

P. O. Box 787
Public Library Building
CHARLESTON, WEST VIRGINIA

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THE WHITE SULPHUR MEETING

The seventy-third annual meeting of the Association with the Medical Society of Virginia at White Sulphur Springs on July 29-31, 1940, should go down in the annals of organized medicine in this state as a successful reunion of the Old and New Dominions, and one of the most outstanding scientific programs in the history of either state. We elected a new president and carved out new activities for the Association next year. We hope every Association member will read the committee reports and other convention transactions published elsewhere in this issue.

President-elect Robert King Buford, M. D.

The new Association president for 1941 will be Dr. Robert King Buford of Charleston, who has long been active in Association work. After serving as secretary and later as president of the Kanawha Medical Society, Dr. Buford was elected to the Association Council in 1934 and served continuously as a faithful and judicious member of that body until his elevation to the presidency. In addition to his service on the Council, Dr. Buford served the profession for several years as chairman of the Legislative Committee. He is well known throughout the state, he is recognized as an outstanding organizer, and through his past Association activities is well equipped to assume the leadership of organized medicine in West Virginia.

Dr. Buford will take office next January first, succeeding Dr. Frank V. Langfitt, of Clarksburg, who has served the Association so successfully this year.

In closing this convention editorial we desire to commend Dr. Langfitt for the gracious and impartial manner in which he, with Dr. Hugh Trout of Virginia, conducted the White Sulphur meeting. We also wish to commend the Scientific Committee for the wonderful scientific program, and the other committees for their excellent reports.

As the convention closed only one day before this issue of the JOURNAL went to press, it was not possible to present the minutes of the meetings of the Council and House of Delegates. These minutes, registration and other convention items not published this month, will appear in the September issue.

COUNTY NEWS OMITTED

Due to the publication of the convention reports and general transactions in this issue of the JOURNAL, the county society news items and many other regular features were necessarily omitted. The reports of the county meetings and other items of general interest will be carried over and published in the September number.

CONSUMERS SALES TAX

The Association headquarters at Charleston recently heard it rumored that the state tax department intended to send out investigators to check up on doctors who have not been paying or collecting the consumers sales tax on medicines dispensed by the physician. The state tax commissioner advised us that no such organized or concerted drive was contemplated.

We list below the essential points, regarding the consumers sales tax, made by the commissioner:

If medicine is purchased or sold in West Virginia, someone must pay the consumers sales tax.

If a physician buys his medicine outside the state and dispenses it to his patients as a part of his professional service, making no specific charge for the medicine, he is not affected by the consumers sales tax.

If a physician buys his medicine outside the state and sells it to his patients, he must collect the consumers tax from his patients.

If a physician buys his medicine inside the state he may either (a) pay the sales tax himself at the time he buys the medicine or (b) collect the tax from his patients when the medicine is dispensed to them.

If a physician pays the tax himself, he has no further obligation or responsibility.

A THERAPEUTIC BLITZKREIG

Considerable interest has been attracted recently to what is spoken of a "the five day treatment for syphilis." Details regarding this plan for anti-spyhilitic treatment are just now reaching the medical profession. The method is not new as it was employed at least seven years ago by Drs. Hyman and Chargrin at Mount Sinai Hospital, New York.

The plan consists in brief of giving a continuous intravenous drip of a chosen arsenical to a patient who must be hospitalized for the purpose. The drug must of necessity be highly diluted in normal salt solution and introduced through needles which are very solidly placed in the vein to prevent leakage. The rate of administration should not exceed 20 to 30 drops per minute.

The early investigators of this method, Drs. Hyman and Chargrin, felt that satisfactory results were obtained in a fairly large group of patients. The patients became and remained serologically negative. Both neoarsphenamine and phenylarsine oxide have been used in this treatment. Where an apparent failure with this treatment occurred a rest interval of several months was allowed and the treatment repeated. For some patients the standard method of treatment had to be adopted eventually but this number was very small in proportion to the total.

Little has been said so far in regard to the bad results which might be expected to occur with such a very intensive method of administration of arsenic. The whole procedure must undoubtedly be carried out in a hospital and under the direction of a physician who is thoroughly familiar with the dangers of the arsenical drugs. The closest attention must be paid to the patient particularly in regard to blood pressure, integrity of kidneys and liver.

The method is undoubtedly not for use by the neophyte in syphilology. A large experience should be accumulated by observation of many patients before general usage.

It is obvious that if early syphilis can be eradicated in such a short period of time that the whole procedure has great importance from the public health standpoint. For this reason, the American Social Hygiene Association has undertaken to gather data as rapidly as possible in regard to the method and has also agreed to help disseminate facts about the results of treatment as they develop. Any qualified physician who is interested may secure further information by addressing the American Social Hygiene Association, 50 West 50th St., New York City.

The plan of intensive anti-luetic therapy has great possibilities and if found reasonably safe and productive of lasting results, a great step forward has been made in anti-syphilitic medication.

CONVENTION TRANSACTIONS

Seventy-third Annual Meeting, West Virginia State Medical Association

July 29, 30, 31, 1940

Report of Executive Secretary

The Association's activities are covered in the various committee reports. Hence my report deals largely with membership and finance, and a few random items that are unclassified.

Association membership has increased 42 since last year, from 1,242 to 1,284. Ninety-nine new doctors have been accepted to membership and approximately 50 have died or moved outside the state. Our delinquent list contains only 39 names, the smallest of which we have a record. The following chart will give a fairly accurate picture of Association membership during the past 10 years.

Year	Membership	Delinquents
1930	1,028	111
1931	951	220
1932	916	192
1933	878	206
1934	1,086	109
1935	1,163	110
1936	1,154	76
1937	1,207	61
1938	1,148	67
1939	1,242	65
1940	1,284	39

We believe this membership chart, plus the various committee reports, will give you an accurate idea of the Association's present strength and influence.

You have read the Association's financial statement in the Treasurer's Report, which precedes this one. The Association's assets increased $1,871.85 during the year, total assets now being $34,767.78. We are rather proud of the JOURNAL's financial record for the past fiscal year. The JOURNAL's profit of more than $2,400 is the largest of which we have a record. This will be covered in more detail in the report of the Publication Committee.

I would like to express a word of appreciation to the Woman's Auxiliary, and particularly to Mrs. Ralph Hogshead, for the excellent historical work which has been accomplished during the past year. Under the direction of Mrs. Hogshead, we have been furnished with some 60 biographical sketches and 28 photographs of Association past presidents. As some of these men have been dead for more than half a century, it is apparent that this Auxiliary project has been a real historical contribution to the Association and to the state. Happily this work will be continued next year.

As most of you know, the license of Dr. S. M. E. Simon of Williamson was revoked by the Public Health Council at its March meeting. Simon appealed to the Mingo County Circuit Court and the appeal was heard at Williamson on July 11, 1940. The Association and the Mingo County Medical Society were represented by Attorney William H. Hogg of Williamson. The Public Health Council was represented by Mr. Kenneth Hines and Mr. Holt Woodell of the Attorney General's office. The court took the appeal under advisement and no decision had been handed down at the time this report was prepared.

We are extremely grateful to the officers and members of the Association for their friendly and understanding attitude toward the Charleston headquarters office. We will always endeavor to the very best of our ability to merit the enviable position as your full time secretary.

Respectfully,

JOE W. SAVAGE,
Executive Secretary.

Treasurer's Report

To the Council and House of Delegates,
West Virginia State Medical Association:
Gentlemen:

Pursuant to authority vested in me through Section 3, Chapter VI of the By-Laws, I employed the firm of Norman S. Fitzhugh, certified public accountants, Charleston, to audit the books and records of the executive secretary for the fiscal year ending April 30, 1940. I submit herewith the auditor's report.

T. MAXFIELD BARBER, *Treasurer.*

I have audited the receipts and disbursements of the West Virginia State Medical Association for the fiscal year ended April 30, 1940, and am attaching hereto statements covering the various funds for the period under review.

All receipts of record and all disbursements were verified and the cash balances were reconciled with statements of the depository banks. I made sufficient tests to satisfy me that all receipts had been recorded, and examined the paid checks covering all disbursements. The annuity contract with Fidelity Investment Association, the life insurance policy on the life of Dr. Hugh G. Nicholson, and the United States Postal Savings Bonds on hand at the end of the fiscal year were verified by inspection.

I therefore certify that, in my opinion, all receipts in the period under review have been properly accounted for and are correctly stated in the books and in the statements attached hereto. I further certify that the balances in banks to the credit of your Association at the close of business on April 30, 1940, aggregated $11,821.31.

A summary statement of cash is as follows:

Balance May 1, 1939	$12,964.76	
Receipts for the fiscal year	25,089.86	
	38,054.62	
Disbursements for the fiscal year	26,233.31	
Balance April 30, 1940		$11,821.31

The cash balance as shown above is attributable to the various fund accounts as follows:

General Fund—Balance	$ 7,367.17	
Medical Journal Fund—Balance	8,573.26	
Indigent Fund—Balance	1,433.62	
Defense Fund—Balance	100.92	
Convention Fund—Balance	851.40	$18,326.37
Nicholson Property Rent Account—Deficit		6,505.06
Total All Funds—Net		$11,821.31

Cash receipts included $3,000.00 from the sale of United States Postal Savings Bonds being part of the bonds purchased in May, 1939, costing $4,987.50, with a maturity value in May, 1949 of $6,650.00. The $3,000.00 received was deposited in the General Fund and is treated as a transfer from the Medical Journal Fund since the purchase of these bonds was made from the latter fund. This sale leaves bonds of a maturity value of $2,650.00, costing $1,987.50, on hand at April 30, 1940.

Cash disbursements included $352.80 payment on the annuity contract with Fidelity Investment Association, which increased the cost of this contract to date to $3,191.40, and $1,261.00 premium on the insurance policy on the life of Dr. Hugh G. Nicholson.

A comparative statement of assets at the end of the last two fiscal years is as follows:

	April 30, 1939	April 30, 1940	Increase **Decrease**
Cash in Banks	$12,964.76	$11,821.31	**$1,143.45**
South Ruffner Park Property	8,442.57	8,442.57	—
Annuity Contract—Cost	2,838.60	3,191.40	352.80
Cash Surrender Value of Life Insurance	8,650.00	9,325.00	675.00
U. S. Postal Savings Bonds—Cash Value	—	1,987.50	1,987.50
	$32,895.93	$34,767.78	$1,871.85

Respectfully submitted,

NORMAN S. FITZHUGH,
Certified Public Accountant.

Charleston, W. Va.
May 15, 1940.

COMBINED STATEMENTS OF RECEIPTS AND DISBURSEMENTS

Balance May 1, 1939		$12,964.76
RECEIPTS		
Dues (Net)	$12,625.59	
Advertising (Net)	7,230.61	
Emblems and Frames Sold	171.33	
Interest on Savings Accounts	17.93	
Commercial Exhibits	1,295.00	
Rent (Nicholson Property)	712.06	
Sale Postal Savings Bonds	3,000.00	
Miscellaneous	37.34	
Total Receipts		$25,089.86
		$38,054.62
DISBURSEMENTS		
General Fund	$12,984.52	
Medical Journal Fund	10,297.90	
Indigent Fund	1,561.00	
Defense Fund	100.00	
Convention Fund	956.50	
Nicholson Property Rent Account	333.39	
Total Disbursements		$26,233.31
Balance April 30, 1940		$11,821.31
Charleston National Bank—Checking Account		$10,610.24
Charleston National Bank—Savings Account		119.68
National Bank of Commerce—Savings Account		1,091.39
Total (as per Balance Above)		$11,821.31

GENERAL FUND

Balance May 1, 1939			$ 4,726.10
RECEIPTS			
Dues	$12,679.59		
Less: Refunds	54.00	$12,625.59	
Sale U. S. Postal Savings Bonds		3,000.00	$15,625.59
			$20,351.69
DISBURSEMENTS			
Salary—Executive Secretary		$ 5,962.50	
Office Salaries		1,441.75	
Office Supplies and Expense		591.84	
Office and Library Rent		480.00	
Library Expense		27.00	
Telephone and Telegraph		237.75	
Postage		402.00	
Travel Expense		1,588.76	
Convention Expense		797.41	
Social Security Tax (Old Age Benefit)		89.90	
Audit and Legal Expense		1,051.85	
Miscellaneous		313.76	$12,984.52
Balance April 30, 1940			$ 7,367.17

MEDICAL JOURNAL FUND

Balance May 1, 1939			$11,429.79
RECEIPTS			
Advertising	$ 8,338.44		
Less: Discounts	1,107.83	$ 7,230.61	
Emblems and Frames Sold		171.33	
Interest on Savings Account		17.93	
Miscellaneous		21.50	$ 7,441.37
			$18,871.16
DISBURSEMENTS			
Printing	$ 4,556.15		
Engraving	187.66		
	$ 4,743.81		
Less: Discounts	123.53	$ 4,620.28	

Emblems and Frames Purchased	170.00	
Postage	121.00	
Annuity Contract—Fidelity Investment Association	352.80	
United States Postal Savings Bonds purchased	4,987.50	
Miscellaneous	46.32	$10,297.90
Balance April 30, 1940		$ 8,573.26

INDIGENT FUND

Balance May 1, 1939		$ 2,994.62
RECEIPTS—None.		
DISBURSEMENTS		
Premium on Life Insurance--Dr. Nicholson	$ 1,261.00	
Benefits paid to Mrs. S. A. Daniel	300.00	$ 1,561.00
Balance April 30, 1940		$ 1,433.62

DEFENSE FUND

Balance May 1, 1939		$ 200.92
RECEIPTS—None.		
DISBURSEMENTS		
Attorney Fees		$ 100.00
Balance April 30, 1940		$ 100.92

CONVENTION FUND

Balance May 1, 1939		$ 497.06
RECEIPTS		
Commercial Exhibits	$ 1,295.00	
Miscellaneous	15.84	$ 1,310.84
		$ 1,807.90
DISBURSEMENTS		
Greenbrier Hotel	$ 500.00	
Supplies and Labor	272.47	
Travel Expense	102.58	
Reporting	69.70	
Miscellaneous	11.75	$ 956.50
Balance April 30, 1940		$ 851.40

NICHOLSON PROPERTY RENT ACCOUNT

Balance May 1, 1939		$ 6,883.73
RECEIPTS		
Rent		$ 712.06
		$ 6,171.67
DISBURSEMENTS		
Taxes	$ 143.05	
Repairs	135.34	
Insurance	20.00	
Miscellaneous	35.00	$ 333.39
Balance April 30, 1940		$ 6,505.06

Black Figures Denote Deficit.

Publication Committee

THE WEST VIRGINIA MEDICAL JOURNAL has experienced the most successful financial year in its history, with a total net profit during the past 12 months of $2,483.77. Only once before has the JOURNAL shown a profit of more than two thousand dollars. Total receipts during the year were $7,441.37, of which advertising revenue accounted for $7,230.61. Disbursements were $4,957.60. Complete figures will be found in the Auditor's Report.

The gross circulation of the JOURNAL has now increased to 1,425 copies per month, and this has increased the publication cost approximately $250 for the year. No additional pages have been added to the JOURNAL, but your committee stands in readiness to increase the JOURNAL's size when sufficient meritorious scientific contributions are placed in our hands for publication. Almost no changes have been made in the composition or makeup of the JOURNAL during the past year, as the present format seems to be still holding the favor of our readers.

Again we request Association members to send us case reports. We have felt for some years that this department is neglected and that much valuable clinical material in the form of case histories is going to waste. We published more case reports during the past year than ever before, but we still feel that this field should be further developed.

One of the most notable improvements of the past year has been in the book review department. Under the direction of Dr. Irwin, we are now running three or four book reviews each month. Members who are interested in writing book reviews for the JOURNAL will have review copies placed at their disposal by writing Dr. Irwin.

We feel that the value of the scientific material published in the JOURNAL is constantly improving. To bring this about, we have turned down approximately 20 per cent of the material submitted, as being not worthy of publication. We are happy to report that a good portion of our rejection slips have gone to out-of-state contributors, although our own members have come in for a few. In every instance where a manuscript is rejected, a personal letter is sent the author with suggestions for revision and rewriting, and an offer to reconsider. We are definitely trying to develop talent in the art of scientific writing among West Virginia doctors.

We again, as in previous years, wish to express our indebtedness to Mr. Joe W. Savage for his

excellent work on the JOURNAL. As business manager, his aid to us has been invaluable, and we extend to him our sincere thanks for his unfailing courtesy and assistance.

Respectfully submitted,

WALTER E. VEST, *Chairman*,
J. HOWARD ANDERSON,
GRATTAN G. IRWIN,
FRED W. WHITTLESEY,
WILLIAM M. SHEPPE.

Medical Service Committee

The Medical Service Committee was authorized and appointed at the White Sulphur Springs meeting in July, 1939. We held our first meeting at Charleston on August 31 with Dr. Ray Bobbitt, president. All but one member of the committee was in attendance. At this first meeting our general policy was agreed on. The committee members and Dr. Bobbitt felt that we should properly interest ourselves in (1) indigent medical service; (2) low income medical service; (3) list practice abuses, and (4) workmen's compensation.

The business of guiding and directing indigent medical service in West Virginia is largely in the hands of our very efficient D. P. A. Advisory Committee. We find that this committee is doing a splendid piece of work. Any report on indigent medical service which this committee might make would unquestionably overlap the report which will be made to you by the D. P. A. Advisory Committee. We will therefore yield this field to the men who are more familiar with this subject.

At our August 31 meeting, it was decided to offer no plans to any of our county medical societies for prepayment medical or surgical insurance, either in the hospital or in the home. At the present time, there are many county and state experiments under way in many other sections of the United States. To date, however, no satisfactory experience has been demonstrated by any of these plans and until such time as dependable actuarial data, based on experience, can be obtained, we feel it is the part of wisdom to "stand by."

Our committee did offer its services to any county society that might contemplate the establishment of prepayment hospital or prepayment medical and surgical insurance. Our services were requested in Logan county and we are sorry to report that the results there have not been very satisfactory. A brief review of the Logan situation might be in order. There are two hospitals there, the Logan Memorial and the Mercy Hospital. About one year ago the Guthrie Hospital at Huntington established a doctor in Logan and started selling contracts to persons and groups residing in the city where other doctors were engaged in the private practice of medicine. This brought a distinct hardship on the men engaged in private practice. This situation was made much worse when the Logan hospitals, in retaliation, began to sell list contracts similar to that of the Guthrie Hospital in Huntington. At the request of the Logan County Medical Society, Dr. Bobbitt and Mr. Savage interviewed the representatives of the two hospitals and an agreement was reached to start a community non-profit hospital insurance plan for that section. The committee then sent Mr. John Hart, business manager of the Hospital Service Plan in Charleston, over to Logan to assist in working out the details of the plan. When the plan was ready to start, the two Logan hospitals cancelled all of their local list contracts so that the holders of such contracts could come in under the non-profit hospital insurance plan. However, many of these list contract holders joined the Guthrie Hospital plan instead and the plan was generally conceded to be unsuccessful. The Logan General Hospital recently withdrew from the plan and it is now being carried on, on a small basis, by the Mercy Hospital. Through Dr. Bobbitt, overtures were made to Dr. Guthrie to withdraw from the Logan field, but without success.

Another situation at Logan has caused our committee no small concern. Both hospitals at Logan handle their compensation injury cases through private contracts with employers of labor, instead of through the compensation department. Under these private agreements, the employers of labor pay the hospital twenty cents per month per employee in return for which the hospital takes care of the injuries of the employees and do not send the bills through the compensation department. This same abuse also exists in lesser degree in several other parts of the state, but it is the rule rather than the exception in Logan county. Our committee strongly feels that compensation injury cases should be handled through the compensation department, as provided by law. Acting on this principle, the matter was taken up with the representatives of the two Logan hospitals. We found these representatives very receptive and cooperative, and, at our

suggestion, they conferred with officials of the Logan coal field relative to correcting their system of handling compensation cases. After several conferences, they reported to us that the coal operators had refused to comply with the compensation law and insisted on handling the compensable injury cases on a twenty cents per month per man basis. That is where the matter stands at the present time. The hospitals advise us that they cannot force this change, because if it is attempted, the coal operators will transfer their lists and compensation work to some other hospital. In this regard, reference has been made to the Holden Hospital a few miles away which a coal company owns.

From the standpoint of ethics, the list situation in Beckley is worse than in Logan. In Beckley there are also two private hospitals—the Raleigh General and the Beckley Hospital. They are engaged extensively in list work. Originally their list work was confined to mining camps and mining towns where the population was served by a company doctor, and the element of competition was therefore more or less eliminated. In recent years, however, these two hospitals have built up rather extensive list service within the city of Beckley. We are advised that employees of barber and beauty shops, department stores, produce houses, and many other employee groups in Beckley pay in to one hospital or the other for complete medical, surgical and hospital care. Except for the specialties this has practically eliminated private practice of medicine in Beckley; most of this work being done by the two hospitals. Unquestionably the two hospitals in Beckley are practicing medicine, and they are doing so to the detriment of the men in private practice.

Designated representatives of our committee have made several overtures to representatives of the hospitals in Beckley to cancel their competitive list work in the city and substitute a non-profit community hospital insurance plan. Thus far we have met with no success and the practice continues unabated.

This committee can report the satisfactory adjustment of one dispute relating to list practice. In the city of Welch the employees of the Appalachian Electric Power Company were covered under a list contract with the Stevens Clinic Hospital. With this one exception, all list practice of the two private hospitals in Welch was confined to mining towns and mining communities, where company doctors were employed. When this matter was called to the attention of the officials of the Stevens Clinic, the matter was taken up with the Appalachian employees group and a new plan was worked out to give the employees free choice of physician and free choice of hospital. Since that time no further difficulty has been experienced in McDowell county.

During the month of June a representative of the Wyoming County Medical Society called at the Association headquarters and asked for assistance from the Association in protecting the private practitioners in Wyoming county from the inroads of hospital subscription list clubs. It was reported that these clubs existed in Mullens, Pineville, and generally throughout Wyoming county and that these clubs were formed by the two Beckley hospitals and by the Wylie Hospital at Mullens. The representative from Wyoming county said that these three hospitals were practicing medicine to the detriment of the Wyoming county doctors who were engaged in the private practice of medicine. This matter came up too recently to receive official consideration from our committee, but it will no doubt be presented at the White Sulphur Springs meeting.

The question logically arises: What can our committee or our State Association do to correct these abuses and to assist and protect our members in private practice from illegal and unlawful exploitation. Fortunately most of the list hospitals in West Virginia realize and appreciate the unfairness of competing against the private practice of medicine and confine their list contracts to more or less isolated mining camps and communities, where a company doctor is employed and where the element of competition does not play a part. We have interpreted the attitude of the Association to be not opposed to this type of hospital list practice. We have further interpreted the attitude of the Association to be vigorously opposed to hospital list practice in areas where free choice medical service is available to the people. If our interpretation is correct, we feel that the time has come for the Association to take action to curb the abuses above mentioned before they become more widespread than they are at the present time. We suggest the following possible remedy:

(1) Bringing injunction proceedings against the offending hospitals for practicing medicine without a state license.

(2) In regard to workmen's compensation, bring injunction proceedings against offending coal companies for failure to comply with the provisions of the compensation law.

(3) Disciplinary action against Association members who are (a) operating hospitals that engage in list practice in competitive areas where free choice medical service is available, and (b) operating hospitals that fail to render bills to the compensation department for service to compensable injury cases.

This committee strongly feels that one or the other of these alternatives should be applied. At the time this report was written the Association's attorney was working on the legal aspects of the first two suggestions above mentioned and it is hoped that we will have his report in time for the guidance of the Council and House of Delegates. Until the Association is willing to restrain these abuses in court, or else to take disciplinary action against its members, there is very little work that our committee can do.

In addition to our August 31 meeting, our committee met a second time in Charleston on December 14 with a good attendance to further discuss the matters mentioned in this report. We conducted a rather interesting survey of list hospitalization and compensation work among the industrial hospitals of the state and most of our conclusions were based on the results of this survey. We issued bulletins to all of the hospitals on January 19, 1940, calling attention to our findings and we released a second bulletin on January 30, to the county medical societies giving the results of the survey and requesting the county medical societies to take steps to correct list hospitalization or compensable injury abuses that might prevail. Since that time our committee has conducted rather extensive correspondence with hospitals and doctors involved in one way or another with the problem. At this time we feel there is nothing further that our committee can attempt until we have further guidance and instruction from the House of Delegates.

Respectfully submitted,

D. A. MACGREGOR, *Chairman*,
B. C. JOHN,
JAMES L. WADE,
R. O. ROGERS,
R. H. WALKER,
EUGENE BROWN.

Legislative Committee

In the absence of a meeting of the West Virginia legislature during the past year, your Legislative Committee reports no gains and no losses in this particular field. However, we do wish to make a few observations, incident to the Association's legislative program for 1941. Having observed the legislative needs of the Association for the past several years, we feel that there are three major problems confronting us. They are:

(1) The absence of a hospital licensing law.

(2) The inroads of osteopaths in the practice of medicine.

(3) The absence of a penalty clause for failure to comply with the workmen's compensation laws.

At the present time there is no law of any kind governing building or maintenance of hospitals in West Virginia. We have laws to regulate banking, plumbing, poultry marketing, barbering, and other important business and professional functions, but none for hospitals. John R. Brinkley or Tony Gallento could come to our state tomorrow, rent the upstairs over a grocery store, start a hospital, and no one could stop them. It seems to our committee that the Association would be wise to confer with officials of the Hospital Association of West Virginia and other interested parties, draft a hospital licensing law mutually satisfactory to these parties, and endeavor to get it enacted by the 1941 legislature.

Four years after graduation from high school, it is possible for a person to legally practice medicine and surgery in West Virginia. They can do so through the short cut known as osteopathy. Osteopaths have their own licensing board and they are in complete control of their own cult. A recent regulation of this licensing board now requires two years of college work, followed by four years in an osteopathic college, before a West Virginia license can be obtained. However, this is a regulation of their board and is not a state law. Their West Virginia law, as stated in the opening sentence of this paragraph, does not require any college training. The West Virginia osteopathic law gives osteopaths the "same rights and privileges" as all other branches of the healing art. They have interpreted this to permit them to stray from the field of osteopathy and to practice medicine, surgery, obstetrics, and all other special fields. One osteopath in Charleston, working in a jewelry store, now advertises himself as an oculist. While we feel there are a number of osteopaths in West Virginia who are

making a conscientious effort to raise osteopathic standards, there is the ever present danger that a different group may assume licensing control, let down the bars, and flood the state with incompetent, poorly trained men of no practical experience to ply their trade upon the unfortunate sick people of this state. There are three suggested remedies for this problem.

First, assume a cooperative attitude towards those osteopaths who stand for higher standards, endeavor to get them to fix identical standards with the regular medical profession, set up a unified licensing board, and then recognize them as duly licensed doctors.

Second, set up a basic science examining board which all persons must pass before they are allowed to practice any branch of the healing arts. A basic science board will not be a complete solution of the problem, but it will raise the osteopathic standards considerably in West Virginia.

Third, go into court and test out the constitutionality of the osteopathic law on the theory that it permits them to practice osteopathy, but does not permit them to practice medicine and surgery.

The present Workmen's Compensation law, as amended in 1935, provides that the compensation fund shall pay the medical, surgical and hospital costs resulting from compensable injuries, even though the injured employee is entitled to such service by reason of a hospital conscription list. In other words, the compensation fund is supposed to pay for compensable injuries. However, there is no penalty provision in this section to compel compliance. It has come to the attention of this committee on several occasions that this section of the compensation law is being evaded by certain hospitals and certain employers of labor. A reasonable penalty clause in the section above mentioned would forestall this evasion. We feel this is a legislative project well worthy of the Association's consideration.

We have listed three major legislative needs of the Association: Hospital licensing, osteopathic restrictions, and workmen's compensation enforcement. It would be futile for the Association to tackle all three of these problems during any one session of the legislature. Assuming that we should sponsor one of these objectives in 1941, your committee would be materially aided if the House of Delegates would reach a decision on their relative importance. Even if no decision is reached, a discussion of these three proposed objectives would be helpful to the committee in endeavoring to interpret and carry out the wishes of the Association membership.

Respectfully submitted,

R. K. BUFORD, *Chairman*,
B. H. SWINT,
A. E. MCCLUE.

D.P.A. Advisory Committee

During the past twelve months your Advisory Committee to the Department of Public Assistance has had advisory jurisdiction over a total expenditure of $616,993. This is represented by payments to doctors and hospitals for services rendered indigent persons on direct relief, on classified assistance, wards of the Childrens' Bureau, and the program of adult physical rehabilitation. Out of the total disbursements of the Department of Public Assistance for the medical care program, $320,531 was paid to physicians and $266,462 was paid to hospitals.

This does not include $124,725 paid to physicians and hospitals through the crippled childrens' program. A special orthopedic advisory board from the Association has advisory supervision over the crippled childrens' program and it does not come within the province of this committee. Adding the amount West Virginia physicians received from the crippled childrens' program brings the total DPA payment to physicians in this state for the past twelve months to $360,531. We present the following breakdown of DPA medical service expenditures:

	Doctors	Hospitals
General medical relief	$260,620	$225,994
Classified medical relief	18,598	7,302
Wards of childrens' bureau	2,770	1,759
Adult physical rehabilitation	38,543	31,407
Total under advisory committee	$320,531	$266,462
Crippled children	39,725	85,000
Total DPA medical program	$360,531	$351,462

Further statistics on the program of adult physical rehabilitation will no doubt be of interest. The total number of cases handled during the past year were 659, of which 234 or 34 per cent have been

restored to gainful employment. This percentage is not as high as that experienced in the first two years of the rehabilitation program, but is still sufficiently high to bring the state an excellent return on its investment in human welfare. Out of a total expenditure of approximately $90,000 for adult physical rehabilitation, the administrative cost was $6,926.80. The average cost per case, including surgical fees, hospitalization and prosthetic appliances, was $99.75.

We are sorry to report that in a few instances there have been indications of needless rehabilitation operations. Perhaps it is not generally known that our committee reviews all questionable recommendations for rehabilitation surgery. We have found reasonable evidence that a few doctors are operating for their fee rather than for their patients. In conducting investigations relating to rehabilitation surgery and other matters, it is urgent that we have the confidence and cooperation of the rank and file of Association membership. We hope all of you will adopt a helpful attitude if we call on you for assistance. Happily the instances of needless or mercenary surgery are extremely rare. All but a fractional percentage of our rehabilitation surgeons are doing honest, able and productive work.

Last fall an independent move was started whereby a number of West Virginia surgeons participating in the adult physical rehabilitation program agreed to contribute their services free to the Department of Public Assistance for ordinary general relief surgical procedures. Approximately 100 West Virginia surgeons signed agreements giving the department the right to call on them for a specified amount of free service for the fiscal year ending June 30, 1940, and an equal amount for the fiscal year ending June 30, 1941. Most of the surgeons contributed $500 each year and a total of $78,000 was contributed for a two year period. The machinery for handling these free surgical contributions was worked out by our committee and the plan actually became effective on March 1, 1940. All records and reports are kept in the office of the executive secretary. It was the feeling of our committee that the contributing surgeons would prefer to have this program handled through their own Association, and that is the way it has been worked out. During the four months the plan has been in operation (to June 30, 1940) a total of $2,395 in free surgical service was reported to the Association headquarters. We feel that a considerable amount of work was contributed which was not reported. Only 19 surgeons participated in the program and cases were handled from only 11 counties. Apparently there are 44 counties in the state that are not taking advantage of the generous and altruistic offer of the contributing surgeons. While this is probably to be deplored, it is certainly no fault of the medical profession.

The money saved to the Department of Public Assistance by virtue of the surgical service contributions is distributed to provide more complete and adequate "family doctor" type of medical service. It is hoped that the contributions will be more widely used during the coming year.

During the past year our committee has adjusted many claims and settled numerous disputes between the profession and the Department of Public Assistance. In some counties, the DPA medical relief program is functioning smoothly and efficiently. In other counties it is a source of constant annoyance and difficulty to patients, physicians, and the DPA. In a few counties where a spirit of antagonism exists between the medical profession and the DPA, we found that indigent patients who were formerly able to secure an unlimited amount of medical service free, direct from the physicians, are now hardly able to secure any medical treatment at all, except in the most dire emergencies.

Our committee feels that the success or failure of the DPA medical relief program in any given county depends at least 90 per cent on the relationship between the local medical profession and the county Department of Public Assistance.

A good county medical society advisory committee, plus a cooperative county director, invariably results in an excellent county medical relief program. A poor committee, plus an uncooperative director, invariably results in a disappointing and unsatisfactory program. There are many shades between these two extremes.

Our committee has found the State Department of Public Assistance and most of the county departments to have an unusually helpful and understanding attitude toward the medical profession. It should be pointed out, however, that the state department exercises no direct control over the various county departments and it is occasionally difficult to adjust county disputes, even though the state department may be in complete sympathy with our point of view.

We have heard the threat of state medicine. The DPA medical relief program is state medicine. The administration of this program is made more difficult by the divided attitude and opinion of our profession. We have many doctors who feel that the entire program should be junked and that the medical profession should go back to the old system of giving free service to all comers. Many other doctors feel that the county departments of public assistance should employ full time doctors on salary to take care of the indigent. Other doctors would like to have a fixed sum set aside each month for county medical relief and distributed in proper proportion to the physicians in the county. Many doctors like the plan as it is now set up, but are bitterly opposed to the red tape which it involves; yet we know that red tape is inevitable in this or any other governmental system of medicine. Many doctors feel that the fees are inadequate. With this we are in hearty agreement, and yet we have records of many doctors who regularly make from $300 to $500 per month through DPA indigent cases. Also we know that the $360,000 paid to the medical profession in West Virginia this past year should not lightly be tossed aside.

In the face of this diverstiy of opinion, we have endeavored to maintain an effective medical relief program from the standpoint of the patient, the medical profession, and the Department of Public Assistance.

Respectfully submitted,

B. H. SWINT, *Chairman,*
JOHN W. MOORE,
(Deceased)
THOMAS H. BLAKE.

Maternal Welfare Committee

Your Committee on Maternal Welfare presents the following report for 1939.

Postgraduate conferences were held at ten selected points in the state during July and August. The division into a northern and southern circuit was again carried out.

In the northern area meetings were held at Buckhannon, Elkins, Keyser, Moundsville and Weirton. In the southern portion at Beckley, Bluefield, Huntington, Ronceverte and Williamson.

It is interesting to note attendance at the various conferences in these areas, for the three obstetric meetings.

In the northern circuit the attendance by physicians registered, was as follows:

Buckhannon 68
Elkins 42
Keyser 62
Moundsville 47
Weirton 69

This gives a total of 288 attending the fifteen meetings. An average of 19.2.

The report for the southern section was:

Beckley 86
Bluefield 47
Huntington 46
Ronceverte 40
Williamson 35

A total of 254 with an average of 16.9.

This shows an improvement of interest in these courses.

Your committee feels that progress is being made in the efforts to promote maternal care in the state. This is evidenced by the fact that the Division of Maternal and Child Hygiene of the State Department of Health communicates to your committee that more than 9,500 mothers are registered in the motherhood correspondence course. Certainly an encouraging report indeed.

At present 30 maternal health conferences are being held each month in the rural areas in West Virginia. At each of these conferences, mothers of the indigent group are given complete prenatal examinations, including a blood test, and return for subsequent checkups until the time the infant is born. They are eligible for examination when the infant is six weeks of age. Local practicing physicians are employed as clinicians in all of these conferences and are paid an honorarium out of childrens' bureau funds.

The chairman of your Maternal Welfare Committee has had the privilege of continuing as a member of the Advisory Committee of the Division of Maternal and Child Hygiene of the State Department of Health, during the past year.

This committee has approved a number of the activities of this division of the health department's work. Among these has been the Wetzel county project. Since July 15, 1939, two nurses have been assigned to an area where they are assisting physicians at the time of delivery in the home. In addition to carrying on this program, they are conducting a generalized nursing program in this particular district. These nurses have assisted in one hundred (100) deliveries from July 15, 1939 to the first of June, 1940. Physicians in this district are supplied with sterile drape sets for use at the

time of delivery and the nurses carry with them all of the equipment necessary for delivery, except instruments and medications.

In those counties where there are full time health units, the health department is carrying forward a program of lay education emphasizing the importance of prenatal, natal and child care. That this is bearing fruit is, in the opinion of your committee, evidenced by the improved maternal mortality statistics of the past year.

The department of health of the state has continued to add to its educational moving picture films. This past year the "Eclampsia" film of De Lee has been purchased and has been loaned to a number of county medical societies for their programs.

Your committee desires to heartily commend the work of Mothers' Clubs, the Red Cross and other groups in the establishment of prenatal clinics, in a number of our cities. In one city two clinics had been started some years ago. These were held on alternate weeks in a different part of the city. The work has developed so rapidly that it has become necessary to hold the clinics each week. It is pleasing to report that the health department of that city has been increasingly cooperative during the past year. It is to be hoped that during this year, more of the interested groups will find it possible to make a start in this field, in other of our cities.

The committee would be remiss were it to fail to express to Dr. Arthur E. McClue, state health commissioner, and Dr. Thomas W. Nale, director, Division of Maternal and Child Hygiene, its appreciation of their marked desire to cooperate with the physicians of West Virginia in furthering maternal welfare activities.

Respectfully submitted,

JAS. R. BLOSS, *Chairman*,
W. E. HOFFMAN,
H. G. STEELE,
M. B. WILLIAMS,
J. F. WILLIAMS,
E. F. HEISKELL,
E. J. HUMPHREY.

Child Welfare Committee

Your Committee on Child Welfare presents the following report for the year 1939:

The postgraduate conferences on pediatric subjects were conducted in July and August. A total of ten conferences were held as compared with fifteen for obstetrics, in the northern and southern sections of the state. Location for the conferences was the same as for those in obstetrics. The attempt was made in selection of the locations to reach as many rural areas as possible.

The total attendance at all the conferences was 360. Since the physicians were asked to register at each conference the actual number of physicians reached with this program is much less than appears by the total attendance record since one physician would register five times if he attended all the conferences.

Your committee wishes to remind you that the program for postgraduate conferences was instituted in 1936. Funds for the conduct of such a program were made available from the Childrens' Bureau in Washington through the medium of our State Health Department. The Division of Maternal and Child Welfare sponsored this program in 1936 and in 1937. The attendance was not what many of us thought it should be, so our Association was asked to sponsor the program, the State Health Department to continue its financial support while the various county medical societies conducted all the "build-up" for the courses. It was felt that more of our members would be interested if it were an Association project rather than a health department project. Total attendance records for all the conferences in 1936 was 932 and for 1939 the total was 902. So when we look at the record we quite naturally should ask ourselves the question: Are we going or coming? Another very serious question confronting organized medicine at this moment is that in the permitting of any financing by federal grants-in-aid to become a fixed part of the distribution of medical and health services, are we not bartering away our freedom? If we would remain a "free" profession is it not better for us to finance from our own Association our program for postgraduate education—or any other program?

It is now almost ten years since a group of our socially minded citizens together with a segment of our own group interested themselves in the problem of protection, health, education, and the general welfare of infants and children throughout the land. The enthusiasts for governmental control of medical practice, together with various types of social workers, have found in child welfare a fertile field for mutual interchange of experience and ideas. Under the term "public health hazard" the problem of child welfare has become a laboratory for governmental social experimentation.

In recent years we have watched the growth of public health hazards to include immunizations, school health examinations, cancer, tuberculosis, syphilis and at the moment pneumonia appears to be slipping into that group. Those of us who view this activity seriously cannot but ponder the question: Will not the entire practice of medicine soon become a public health hazard?

Since the first report of your committee in 1936 the plea has been made that all of us interest ourselves actively in preventive medicine procedures; has urged the support of these postgraduate conferences as the answer to the demand for periodical licensure.

At our annual meeting in 1939 your committee asked that a permanent committee for postgraduate work be set up. This request was granted and this committee is actively engaged in a program to extend postgraduate study to include all of medicine and surgery and to bring such study to the door of every physician.

Your committee is sincere in its expression of appreciation for the wholehearted cooperation of Dr. Arthur E. McClue, state health commissioner, and Doctor Thomas W. Nale, director, Division of Maternal and Child Hygiene, in their desire to awaken we physicians to the full responsibility for the conduct of a higher type medical service program. These gentlemen are loyal members of organized medicine but are governmental employees and as such are sworn to give the services demanded by the government if we fail in our responsibility. The report of preschool child health conferences for the year 1939 shows that 16,776 children were in attendance. Diphtheria immunizations totaled 10,457. Smallpox vaccinations totaled 9,632. Sixty-two infant health conferences were conducted monthly. While many private physicians officiated in this work it still is a public health program.

Your committee wishes to ask the question: Are we not educating the public to mass services away from the offices of the physicians?

While our "scientific" growth in medicine has become the envy of the entire medical world our "social" growth is lagging far behind.

Because of our limited "social" view the governmental road bearing the sign "public health hazard" leading into the practice of medicine is rapidly widening. The challenge is in our lethargic state of mind.

Unless we assume the responsibility for making ourselves better physicians and as such, give a more complete type of preventive service to all segments of the population we must ultimately distintegrate into a fueling tank for a totalitarian political movement.

We need but accept the challenge of social leadership, social objectives, and social responsibilities to retain the prerogatives which are our rightful heritage.

ANDREW E. AMICK, *Chairman*,
RAYMOND SLOAN,
CARL JOHNSON,
RUSSELL BOND,
HARLOW CONNELL,
ARTHUR SHAWKEY,
THERESA SNAITH.

NOTE:—Because of the shortness of time to get this report in the hands of the Association members it could not get the approval of the entire committee.

Syphilis Committee

(1) The committee has held two meetings during the fiscal year and will again be in session at this state convention. At the last meeting held in Parkersburg, Dr. Edward J. Van Liere, chairman of the Committee for the Study of Laboratories in West Virginia met with the syphilis committee. At all meetings the State Health Department has been represented by the director of the Venereal Disease Bureau and other members of the department. It is recommended that this close cooperation continue and that the syphilis committee in view of its related interests work in close cooperation with the committee headed by Dr. Van Liere. In view of the appointment and functioning of this committee matters directly related to the laboratory service of this state will not be reported upon by the syphilis committee and reports on these matters may be expected from Dr. Van Liere's committee.

(2) The committee is glad to report that the work of the Venereal Disease Bureau has been carried forward unremittingly under its new director Dr. Hozier. There are at present 60 treatment centers operated by city and county health departments in West Virginia. These vary in efficiency from the very best to something less than this. It is the opinion of the committee, however, that the State Health Department through its representative in each city and county has striven to

increase the efficiency of these treatment centers. The additional funds which have been made available through federal grants have been of great value in promoting a more complete city-county health service especially from the standpoint of venereal disease.

The committee urges that the most careful individual attention be given to the treatment centers by the director of the Bureau of Venereal Disease by someone acting under his authority, in order to maintain a reasonable standard of efficiency in the operation of these treatment centers in the various cities and counties.

It is urged, in regard to the treatment centers, that the following points receive continued emphasis:

(a) Close adherence to the standard treatment outline for early syphilis.

(b) Increase in number of injections of arsenicals and heavy metals.

(c) Continuation of the efforts for the performance of physical examinations on all patients.

(d) We again urge that lumbar punctures be performed on all patients at least before discharge and at an earlier date if the clinical findings indicate it as desirable.

(e) We urge a continuation of follow-up from one county to another during the treatment of transient patients. There should be no break in the treatment schedule for those who move from the supervision of one health officer to another.

The committee wishes to emphasize that no patient should be received for treatment at these centers unless specifically referred by a private physician.

It is the opinion of this committee that the Venereal Disease Bureau should release material to the press, giving information to the lay public relative to syphilis in West Virginia and the progress which has been made in its control. A great deal of the discussion and excitement attending the launching of the anti-syphilis campaign has died down as far as the public is concerned. We think that this should be kept alive by continued factual reports to the general public through the press by the Bureau of Venereal Disease.

This material should be forwarded to the secretaries of the county societies for distribution to the various local editors.

(3) For the past two years this committee has striven to consumate a plan for hospitalization and treatment of indigent paretics. This program is believed to be of prime importance as a means of interrupting the steady stream of advanced paretics admitted to the state institutions every year. It is necessary to maintain these people for long periods of time at public expense. The program, although progress was made, was not successful in 1938 due to lack of available funds. It is estimated that from three to four hundred indigent paretics per year will require treatment with malaria. The committee is glad to report that the Department of Public Assistance has been able to find means to pay for hospitalization and transportation to the hospital for cases which have been selected to receive malaria therapy. We recommend that no patient be accepted for this treatment except those nominated by directors of the city-county clinics and this selection would be subject to approval by the director of the Bureau of Venereal Disease. The committee also insists that such treatment be carried out in such institutions and particularly under the direction of such doctors as are known to be skilled in the use of malarial therapy. The syphilis committee recommends that men chosen to supervise this malarial treatment (serving on a voluntary basis) will be recommended by the joint action of the Syphilis Committee and the Bureau of Venereal Disease. We are glad to report that it seems possible that this work may be begun at an early date.

(4) The committee has again reviewed the forms for reporting of venereal disease in West Virginia. It is again recognized that this reporting is faulty due to the indifference of many physicians. All doctors are urged to report each and every case of venereal disease. The committee recommends the reporting form to be employed and distributed by the health department to consist of a franked postcard similar to the communicable disease card. This motion is made with cognizance of the fact that most doctors report by number only.

(5) The committee again calls attention to the syphilis project still being carried on in Logan county. This was started in November, 1938, being one of the eleven similar projects in the United States. The project is costing about $16,000 per year of which part is secured from the DPA, part from federal funds and part from state funds. The project has had an attendance of an average of 785 people per week, of which 285 have been handled by private physicians. This committee wishes to congratulate the Logan County Medical Society on its efficient and willing cooperation with this project. We believe that the results of this research

will serve not only to discover and treat large numbers of cases of syphilis of all types, but will at the same time furnish information obtainable in no other fashion for the drawing of worthwhile conclusions in regard to epidemiology, case finding, clinic administration and the efficiency of various types of treatment. The committee wishes to sincerely approve of the continuation of this project.

(6) (a) It is recognized that the purchasing agent and the state health commission is from time to time under considerable pressure to purchase drugs of various types, some of which are satisfactory and some of which are undesirable. The committee recommends that the purchase of all drugs by the State Health Department be limited to those which are Council accepted products.

(b) The State Health Department under direction of the United States Public Health Service is desirous of distributing free drugs to the entire profession of West Virginia for treatment of all cases of syphilis regardless of their financial status and regardless of collection of fees by the physician. The Syphilis Committee is opposed to this plan and believes that it is a matter definitely affecting medical practice in West Virginia in general. This committee does not wish to make a recommendation on this subject at the present time but has asked the Council of the West Virginia State Medical Association for advice. It is suggested tenatively that it would be both interesting and informative for the state secretary to poll the entire membership on the question of distribution of free drugs for treatment of syphilis and gonorrhea.

(c) There has been considerable discussion relative to the performance of free laboratory service of all kinds on all patients to be carried out by the state hygienic laboratory. The State Health Department, if we are correctly informed feels that the state hygienic laboratories should be thrown wide open for public health reasons. One of the arguments used to substantiate this idea is that about 70 per cent of the doctors in West Virginia send all of their laboratory work to the state laboratory regardless of the ability of their patient to pay for such services. This committee and the committee for the study of laboratory service feel that such a decision is somewhat unfair to members of the society who are operating private laboratories. As stated above this committee has referred such questions to the Committee for the Study of Laboratory Service in the state and this will be the subject of an additional report from this committee.

(7) (a) The Syphilis Committee has requested the State Health Department to obtain figures on the results of the working of the pre-marital law. We are interested in how many actual examinations have been made, how many cases of syphilis have been uncovered and thereby presumably treated. This information is to be requested of all accredited laboratories. We must recognize that this is putting undue weight on laboratory examinations but it represents a ready and easy fashion of collecting statistics in the pre-marital group which will be approximately correct.

(b) It has come to the attention of the committee that too much stress has been placed by various physicians on laboratory reports which are in no sense diagnostic and may be considered only indicators pointing the way for further study of the patient, certainly not for the initiation of an elaborate and sometimes dangerous treatment. This committee strongly recommends that all physicians establish definitely by repeated blood examinations, thorough physical examination and when indicated spinal fluid examinations, the presence or absence of syphilis in these pre-marital candidates before launching upon any real treatment schedule for the individual suspected of having syphilis. In general the committee is glad to approve of the working of the pre-marital law as we have observed it to date. It is our impression that the public has accepted this law with satisfaction and that in the main it has been working for the common good.

(8) The Bureau of Venereal Disease of the State Health Department was asked by the committee to send to all county secretaries sufficient numbers of the booklets published by the United States Public Health Service entitled "Treatment of Syphilis by the General Practitioner", for distribution to the entire county society membership. This booklet is extremely valuable for teaching purposes. It will bear a sticker indicating the endorsement of the West Virginia State Syphilis Committee.

(9) It is believed that a good many cases of syphilis are to be found in the correctional institutions in the state. The committee has been informed that treatment and follow-up in these institutions is not uniform and is not always adequate or based on modern ideas of the treatment of this disease. In view of the sexual promiscuity and the irresponsibility of individuals incarcerated in these institutions, we believe every effort should be made to locate and control every such infected inmate.

A committee of the State Medical Association does not have the authority to investigate these institutions without direct approval from the Governor and Board of Control. We feel that it would be advisable for the Board of Control to officially request the Bureau of Venereal Disease of the State Health Department to inspect each and every correctional institution in this state from the standpoint of case finding and treatment of syphilis.

The committee feels that the State Health Department should exercise supervision over the treatment of communicable disease existing in the state institutions. We request that the executive secretary address a letter to the Board of Control asking authorization for the State Health Department to conduct this survey. We further suggest that the finding of the survey be referred to the Syphilis Committee.

The Syphilis Committee wishes to go on record as being unfavorable to the carrying out of industrial survey work by the state hygienic laboratory. This again is believed to be unfair to the doctors and members of the state society who are operating private laboratories. This matter is also referred to the committee for the study of laboratory service for further action.

(11) There has been no change in regulations in regard to barbers and beauticians and we recommend that no change be made. It is our impression that the state hygienic laboratory has consistently refused to carry out blood examinations for this group. We believe that this policy was not so strictly adhered to in regard to pre-marital examinations especially during the first six months of enforcement of the law. A greater percentage of premarital examinations are now being conducted by private laboratories.

(12) The committee again urges that all prenatal and postnatal clinics secure blood Wassermanns on patients applying for care.

(13) The committee again recommends to the members of the State Medical Association that each and every pregnant woman coming under that physicians' jurisdiction should have a blood Wassermann taken at once. We also recommend that babies born of syphilitic mothers who may or may not have had treatment should be subjected to the following routine:

(1) Microscopic examination of the placenta.
(2) Wassermann on cord blood.
(3) Wassermann on babies' blood.
(4) X-ray of long bones.
(5) If babies blood is negative, the examination should be repeated in three months time.

The committee feels that previous attempts at holding of syphilis seminars for postgraduate instruction have not been particularly successful. Certainly this is true from the standpoint of the private physician. We recommend that subjects of importance relating to syphilis be introduced into the program now being set up by the Committee for Postgraduate Instruction in the state. It is believed that this will be productive of better results at far less cost than any attempt to hold syphilis seminars as a separate project.

Respectfully submitted,

W. M. SHEPPE, *Chairman*,
JAMES WADE,
G. R. MAXWELL,
BOYD BROWN,
GEORGE EVANS.

Postgraduate Clinical Studies Committee

The proposal is made in the belief that there is a growing realization among the medical profession that some form of readily accessible continuing contact with current trends in medicine or current clinical education is imperative. The setting up of this committee is largely based on that premise, and follows steps taken in this direction by the American Medical Association through an activity of the Council on Medical Education.

It further seems logical then, to assume that not all doctors will be interested in, or feel themselves particularly attracted to, the same program. It is scarcely necessary to point out that the physician in a predominately rural practice, particularly one somewhat apart from good hospital facilities, will hardly be attracted to, or deeply interested in, the same type of program which will most appeal to the physician with a predominately urban practice who has more or less daily contact with good hospital and clinical facilities.

In view of this generally recognized and appreciated fact it is felt that for the State of West Virginia, three different types of programs should be considered as fundamentally desirable. For sake of simplicity we may refer to these three different types of programs as type A, type B and type C.

The type A program would be one developed primarily for the benefit of urban physicians who have the opportunity to belong to the larger and more active medical societies such as are to be found

particularly in the counties of Kanawha, Ohio and Cabell.

At the other extreme would be the type C program which would be organized primarily for the benefit of the physicians whose practice is predominantly rural, and who, in general, is somewhat removed from every day and ready access to hospital and clinical facilities. In general these physicians would be located in counties where there are no organized medical societies or else very small ones; or where, because of distance and other limiting factors, the physicians would be somewhat handicapped in regard to frequent contact with hospital and clinical facilities, such as would be of great aid to them in continuing their contacts with modern medical practice.

Between the type A program on one hand and the type C program on the other, there would be an intermediate program planned for physicians who are neither as fortunately situated as those who would be reached by the type A program, nor as unfortunately situated as those to be reached by the type C program. Accordingly, the type B program would be planned for this intermediate group. It would be directed in the main toward physicians located in communities where the medical society is not large, and where medical meetings and hospital staff meetings are of an infrequent and intermittent nature, largely lacking in educational continuity.

Without drawing any hard or fast lines, we can readily conceive of two very distinctly different programs, type A and type C; and a third, an intermediary combination of these, type B.

The committee believes that plans should be developed along these general lines and with these general objectives.

The committee presents the most important phases of the early planning, and has to some extent discussed them and their importance in the following topical discussion:

The committee has recommended that each of the component societies of the State Association have a standing committee on Programs and Postgraduate Clinical Studies, and that the membership on the standing committee rotate so that members have a continuity of membership of not less than three years, and preferably five years, on the committee. A new member would be appointed and the oldest member would retire each year. The experience gained in the activity of this committee by each individual member would then be of great value in the actual administration of the activity of the committee in promoting a good result from the standpoint of the final contribution.

It is felt that this is one of the most important steps to be undertaken in the very near future by the various component societies.

These standing committees as far as the type A programs are concerned would be the active administrative agency. In theory, and in practice also it is hoped, this standing committee would represent to the county society what the state committee represents to the State Association. Any phase of a county scientific program, or of a postgraduate educational nature within their district, regardless of whether related to a type A, B, or C program, would come directly under their supervision. They would be the committee which would maintain contact with the state committee on Postgraduate Clinical Studies, thus providing the link between them and the local society.

In order to have the educational carry-over of an activity of this sort well balanced and at the same time to maintain interest, it seems that a period of five years should be considered as the unit of time upon which such a program should be based. If this is done, it would be possible to so rotate the subjects to be covered that in the content of material presented there would be a well-rounded representation of the general field of medical practice, instead of having it be one-sided in any one field of activity, to the neglect of many more equally important and desirable fields or subjects.

The committee has, therefore, recommended that in considering the three types of programs, that these programs be thought of and planned in terms of a five year activity, and that the subjects be appropriately balanced for each program so that a suitable rotation with diversification of subjects and interests is observed.

Based largely on studies of successes and failures in other states, the committee feels that it is absolutely essential that a director of Postgraduate Clinical Studies be employed as soon as possible to administer the activities of the three proposed types of programs. The director need not necessarily be a medical man, but it is highly desirable that he be somebody with a pleasing personality, somebody who will cooperate satisfactorily with Mr. Savage and his office, and somebody who in the field would be a good representative of the State Association, the office of the secretary, and of the state committee on Postgraduate Clinical Studies. If possible,

he should be someone previously experienced in the administration of such programs in other states.

It is doubtful if a person could be found who would be able to do this on a full time basis for less than $3,000.00 a year, plus some traveling expenses; or $2,000.00 for half time, including some of his traveling expenses in this amount. The probable cost would be from $2,000.00 to $4,000.00 per year.

If he were to be employed on this basis as a part time worker, it is possible that the remainder of his time might be spent in the office of the secretary of the State Association as an administrative assistant. This point was taken up with Mr. Savage. It is one about which thought should be given at the present time, for Mr. Savage very much needs such an administrative assistant. It is quite possible that if we were not able to have a full time director, such a compromise on a part time director might be satisfactorily worked out.

The director of Postgraduate Clinical Studies, after he is employed, could be of great help in aiding in the organization of both type A and B programs, while in the type C program he would in a large measure be the active organizer and executive agent and would carry out the organization and administration in accordance with the advisory guidance of the state committee.

As far as type A programs are concerned, they need be of little cost to the general state program. All that will be necessary for their development is for the societies coming under this classification to arrange their program committee's activities and programs in accordance with the suggestion made by the state committee. This would mean that the educational contribution of the program be held paramount, and that they plan their program so as to have, over units of a five year period, a proper representation of the various phases of medicine. In this way they may avoid lack of balance from having too much in the way of any special field such as operative surgery, etc. Likewise, they can aid the lecturers in giving them directions as to type of talks desired.

It is the belief of the state committee that the program should be arranged to appeal to the general medical man, rather than to the specialist members of the society. In other words, the objectives of this program should be aimed at general problems of medicine in the type A programs, and not toward the special subjects so generally filling the programs in the urban medical societies. These programs can be made definitely constructive with no cost to the general state program, and at no increase in cost to the local societies. Consultation with the state committee from time to time might be desirable in order to work toward this end. Out-of-the-state speakers will generally be employed, and the local societies will, as in the past, defray the expenses of their own program whenever expenses are so incurred. Meetings could be held once or twice monthly.

As far as the type B programs are concerned it may not be possbile for them to have meetings as frequently as will be held in the societies employing type A programs. Because of the fact that the societies are not large, it will probably be impossible for them always to have out-of-the-state speakers. However, speakers from within the state and occasionally speakers from without the state can be supplied at little or no cost to the local societies. Otherwise, in so far as possible, they will be organized like the type A programs with perhaps the introduction of special clinical days, symposia, or one day clinical "refresher" sessions, employing teams of clinical demonstrators.

As far as the type C programs are concerned, after an experience extending over the last five years in our own state, and as a result of observations made in other states, and after conferences and consultations with the representative of the Council on Medical Education of the American Medical Association and other appropriate sources, the committee feels that the physicians who are most remote from educational, clinical and hospital facilities are the ones for whom a special effort should be made. In this we should attempt to carry to them courses which tend to review current trends in medical diagnosis and practice, and to attempt to orient them with regard to controversial or confusing issues of practice and treatment; to interpret to them the limitations and disadvantages of the newer therapeutic agents and measures as well as their promising possibilities.

It is the impression of the committee that there are very definite limitations as to what can be achieved in a purely educational way in these extramural courses, and we are not deceiving ourselves into thinking that they are any too potent an educational force. On the other hand, we feel that when they are properly organized and properly carried out, they will have a definite value, and serve a definitely constructive mission. They should not attempt to teach didactic or formal medical matter.

The committee feels that it is possible to interpret to these physicians in general medical practice in a constructive way, just what are the proper interpretations to be put on many of the confusing issues which arise in medical practice today, and for which a reasonably good answer is available, but which the physician so handicapped by geographic location in general will hardly go to the trouble to attempt to get answered. In almost all instances the work of programs of the C type will be on a very plain and simple basis. They should be so planned that they are extremely practical and not didactic or formal in nature.

Opportunities for informal teaching, and teaching through constructive consultation guidance outside regular periods of instruction should be encouraged and stressed. When the instructor is most advantageously selected, it is possible for him to give them much in the way of stimulation. In the selection of clinical instructors for these programs, it is important that this phase of the instructor's contribution be considered along with that of his clinical and teaching ability.

For these so-called "refresher courses," it seems that in West Virginia for the time being at least, that the circuit type of program may seem to be the most desirable. To this end the committee has designated several centers which would seem to be suitable and desirable from the administrative standpoint, as well as from the standpoint of specific local need in which to conduct these programs.

The committee recommends that during the summer of 1940 these centers be the ones in which the courses in pediatrics, tuberculosis and syphilis be given, through the office of the director of Maternal and Child Health in the State Department of Child Health, and through the office of the secretary of the State Medical Association, representing the association and our state committee.

As has been emphasized, the type C program would be largely that type of extramural program which is carried to the rural physicians in an extramural way, as opposed to the intramural program where the physicians are brought in to a teaching center for instruction. There are other techniques of clinical study which are being specifically planned for physicians in this special category. The committee is keeping in touch with the various techniques and practices in this field which are being employed in other programs, and it is studying them critically with the thought in mind of local interpretation and, if desirable, later recommendation for adoption by us. The committee has no desire at this time to go into a discussion of the merits of the various types of such programs. As far as our own state program is concerned, the committee feels that, for the time being at least, we should contemplate no more than the three basic types of programs already described.

This much may be added, however, that the use of a full time instructor for type C programs in other states has been very successful in pediatrics, obstetrics and tuberculosis. The committee is watching with special interest such practices.

One of the activities of the state committee which is in progress at the moment, is the organization of a speakers' bureau, primarily for the benefit of communities having the type B program. This will enable a diversified and an educationally constructive society scientific program to be carried on without great expense either to the local societies or to the general state program.

Dr. Ashton of Beckley is chairman of the subcommittee on organization of the speakers' bureau. There will be listed and kept on file in the office of the secretary of the State Association, a card index which will show not only the names of the speakers who are willing to appear as essayists on type B programs, but also a file of subjects with those willing to speak thereon. In this way, with proper forethought and planning, it will be easy for contact to be made between the society or group conducting the type B program on the one hand, and on the other, a speaker of their selection to present the subject of their desire.

It is conceivable that under certain circumstances where travel is for a particularly long distance, that some compensation for travel be rendered the speaker. Where this cannot be met from the local funds, it is possible that some way may yet be worked out through which the general postgraduate educational fund may in some way contribute to this phase of the type B program. Similarly what is to be done in the way of preparing mimeographed notes, etc., can be done through the general office of the state committee, with funds provided through the general state postgraduate educational fund. This should not be a very taxing responsibility. The committee is particularly desirous of having all who will and can, volunteer for service on this speakers' bureau program.

It was felt, that after suitable deliberation, the state committee could set up a list of topics in groups of 20 or 40, and that these in turn would be broken

down into fifths, representing the yearly division of the program. This list would represent the required spread of subjects, would present a desirable balance from the standpoint of topics involved and fields covered, and indicate how they could then be spread out over the five year period. Regardless of whether to be used in type A, B or C program, the balance to be observed should rather closely coincide with that suggested by the state committee in order that the educational contribution be that desired.

From evidence produced in a statistical study, carefully prepared by a sub-committee under the chairmanship of Dr. Gill, the committee feels that $8,000.00 a year for five years, or a total of $40,000.00 would provide us with a reasonable amount of funds to carry on what we feel would be a first class program. On this basis we would not require funds from any other sources.

If, on the other hand, we could have $5,000.00 a year, or $25,000.00 for the five years, and could continue to utilize the assistance of the maternal and child health funds, and also utilize available help from the communicable disease, tuberculosis, and venereal funds of the Department of Public Health, we could put on essentially the same program as if we were to have the total of $40,000.00.

In other words, we could put on a pretty decent program with $25,000.00 for the five year period if we were permitted to employ what funds we can get from governmental agencies. If not, it would require approximately $40,000.00 for the five year period to put on a constructive educational program.

The problem as to how the money for this program, if adopted, can be raised is the one now confronting the committee. The committee feels that it can not see the use of attempting a program which falls below the minimum here proposed. The results therefrom would not be worth the effort required.

The committee has no definite proposals to make to the State Association as to how or where these funds can be raised. A membership levy of $5.00 per member per year for the Postgraduate Clinical Study program, would provide $5,000.00 a year approximately, or $25,000.00 for five years. Certainly a minimum of $5,000.00 a year or a maximum of $8,000.00 a year will be required. It is to be understood that the salary of the director of postgraduate educational activities would come from this fund.

The committee has become identified with the Associated State Committees on Postgraduate Education, sponsored by the Council on Medical Education of the American Medical Association.

At our January meeting we recommended a change in the existing convention schedule of sectional and specialty meetings. There are now four sections and three special societies that meet conjointly with our Association each year. It becomes increasingly more difficult to crowd in satisfactory meeting places and satisfactory programs for these seven specialty groups during the three days of our state meeting. Each detracts from the other. Many of these groups have complained bitterly of the short amount of time alloted to them. Our feeling toward the sections and special societies is most sympathetic, yet we must recognize the fact the more time given to specialty meetings, the less time we have to devote to the great, general problems of the men in general practice.

The time has come when the specialist, if he is to receive the consideration properly due him as a specialist, must make definite efforts to keep up his interest in general medicine. The interests of the man who limits his work to a special field must continue to be in sympathetic touch with the scientific phases of general medicine, otherwise the narrowness of his understanding of general medicine will tend to undermine his real worth as a special worker. Specialization is indeed no possible excuse for a medical man withdrawing his interest from the scientific problems of general medicine. Because it tends to limit his own technical work to a given field, the specialist needs to make a special effort to keep in touch with general medicine if he is to properly fulfill his mission as an interpretator of special medical problems.

We believe the House of Delegates should give serious consideration to a solution of this problem, in both its administrative and professional phases. We would suggest that a full week be set aside each fall for our section and special society meetings. This period could be designated as the "Fall Specialty Seminar Week" or some more catchy title. Members of national specialty groups could arrange their state meetings for just such a week and thus not increase the actual number of meetings to be attended by them. A town or city could be selected where the seminar week would be held and the facilities of the office of the executive secretary could be utilized in carrying out all necessary arrangements. This would enable the Association to carry

its influence and activities to the smaller cities not large enough to take care of the annual meeting. In carrying out this plan, each specialty could have an entire day for its meetings.

This plan would not preclude the specialties from participating in the annual meetings. Each specialty could continue to select its speaker for the state program as has been done in the past. Luncheon gatherings with these speakers could be arranged, as well as question and answer periods. However, the real specialty work would be done at the fall seminar, and we could then better design our state meeting programs along more generally productive postgraduate lines, and the problems of general medical interest would be the annual feature.

The committee finally wants to make it clear that neither individually nor collectively do they want to, or will they, assume the rôle of medical educators or "intellectual uplifters." The State Association has placed a responsibility on the shoulders of the members of this committee for the consideration of a problem which is now being faced by most state associations. During the past year, the problem has been studied by the committee from a purely objective viewpoint. The committee has attempted to interpret national needs, trends and practices on the basis of conditions found in West Virginia. The report is submitted with no feeling that this program must be developed. No campaign for its adoption may be expected to come from the committee. The work has been done by the committee members simply because it was a responsibility placed upon them. The committee members have accepted and carried out this responsibility which was unsolicited and unwanted on their part. They have nothing to sell, and no academic points to establish. The report is presented for the Association to consider.

GEO. M. LYON, *Chairman*,

A. E. McCLUE, F. R. WHITTLESEY,
A. C. WOOFTER, R. D. GILL,
D. C. ASHTON, W. R. LAIRD.

Necrology Report — 1940

It is with deepest regret that the demise of the following members of our Association is reported:

Dr. Lyle B. Hart, Beckley.....July 6, 1939
Dr. W. L. Simpson, Wellsburg....July 15, 1939
Dr. J. R. McCutcheon, S. Char'n..July 28, 1939
Dr. James E. Roberts, Charleston..July 26, 1939
Dr. Max W. Vieweg, Wheeling..Aug. 13, 1939
Dr. Barrick S. Rankin, Kingwood..Aug. 23, 1939
Dr. U. L. Dearman, Parkersburg..July 11, 1939
Dr. James H. Craft, Springton....Sept. 24, 1939
Dr. H. C. Jones, Huntington....Sept. 29, 1939
Dr. G. H. Barksdale, Charleston...Oct. 9, 1939
Dr. Etley P. Smith, Fairmont.....Oct. 18, 1939
Dr. G. J. E. Sponseller, Mart'burg.Nov. 14, 1939
Dr. Edward T. Wetzel, West Union..Nov., 1939
Dr. Raymond E. Bailey, Hamlin....Jan. 3, 1940
Dr. K. C. Pritchard, Huntington...Jan. 5, 1940
Dr. M. H. Brown, Morgantown..Jan. 10, 1940
Dr. Lowry W. Page, Buckhannon....Jan., 1940
Dr. C. A. Ray, Charleston.....Jan. 21, 1940
Dr. H. A. Barbee, Pt. Pleasant....Jan. 29, 1940
Dr. Wm. J. Melvin, Darke.....Feb. 19, 1940
Dr. J. M. Miller, Charles Town..Feb. 28, 1940
Dr. H. B. Price, Parkersburg...March 24, 1940
Dr. W. T. Cameron, Mill Creek..April 12, 1940
Dr. Otis L. Aultz, Charleston.....May 14, 1940
Dr. John W. Moore, Charleston..July 20, 1940

Dr. John W. Moore

Dr. John William Moore, prominent Charleston physician and a member of the Association's Public Assistance Advisory Committee, died following a brief illness on July 20. He was 70 years of age.

Dr. Moore suffered a heart attack at his office on July 17 and died three days later. Born in Lexington, Virginia, on November 6, 1869, he received his academic schooling at Washington and Lee University and was graduated in medicine from the University and Bellevue Hospital Medical College, New York City, in 1899. He practiced in Charleston from 1903 to 1917 and served as a captain in the Army's Medical Corps during the World War. He later spent three years in China as a medical missionary. He returned to Charleston in 1926 and engaged in private practice until his death, specializing in internal medicine. He was a Fellow of the American College of Physicians.

Dr. Moore was active in several business enterprises in Kanawha county and served as president of the First Federal Savings and Loan Association. At one time he was superintendent of the Charleston General Hospital, and was at the time of his death, superintendent of Mountain State Hospital.

Dr. Moore married Miss Daisy Preston of Lexington, Virginia, in 1908. She died in 1921. He later married Miss Laura Dyer Venable, who with one son, John Venable Moore, survive him.

General News

New Association Officers

The following officers of the Association were elected by the House of Delegates at White Sulphur Springs on the evening of July 30 and will take office next January first.

President—Dr. Robert King Buford, Charleston.

First Vice President—M. H. Porterfield, Martinsburg.

Second Vice President—D. G. Preston, Ronceverte.

Treasurer—Dr. T. Maxfield Barber, Charleston.

Councillors:

First District—J. B. Clinton, Fairmont.

Second District—A. P. Butt, Elkins.

Third District—C. O. Post, Clarksburg.

Fourth District—J. L. Wade, Parkersburg.

Fifth District—Frank A. Holroyd, Princeton.

Sixth District—Andrew E. Amick, Charleston.

A. M. A. Delegate—Walter E. Vest, Huntington.

A. M. A. Alternate—W. P. Black, Charleston.

Necrology Committee—C. O. Henry, Fairmont.

Committee on Scientific Work—R. J. Wilkinson, chairman, Huntington; P. A. Tuckwiller, Charleston; Howard T. Phillips, Wheeling.

Medical Service Committee—D. A. MacGregor, Wheeling; R. H. Walker, Charleston.

Place of 1941 Meeting—Charleston, W. Va.

Preparedness Questionnaire

"Cooperation and preparedness at this time constitute the duty of every American citizen who enjoys his citizenship and wishes to preserve the American democracy," an announcement in the Medical Preparedness Section of *The Journal of the American Medical Association* for July 13 declares in a plea for the immediate filling in and returning to the Committee on Medical Preparedness of the Association of a questionnaire being sent to every licensed physician in the United States and in all its territories.

"This questionnaire," the announcement points out, "is being sent at the request of the Surgeon Generals of the United States Army, Navy and Public Health Service as part of the plan for preparedness of the medical profession to enable our country to meet any emergency which may arise. The questionnaire was developed with the advice and assistance of the members of the Committee on Medical Preparedness and of the Surgeon Generals. Just as soon as these questionnaires are received in the headquarters office of the American Medical Association the information supplied will be transferred to cards in a punch card system, so that it will be possible by the use of the usual machines to make a selection of physicians capable of serving in various military, naval, industrial or civil capacity.

"The physician who receives this questionnaire should take the necessary time and give the necessary thought to supply a complete and absolutely correct reply. It is the desire of the authorities, should an emergency arise, to place every individual capable of rendering aid in the position in which he can be of the utmost service, and also naturally where his training and his experience most deftly qualify him. It will be observed that opportunity is offered to state appointments in hospitals, together with the nature of the appointment, membership in special medical organizations, together with the nature of such membership, and whether or not the physician possesses the certificate of one of the examining boards in the medical specialties. There is also opportunity to provide complete information concerning the civil status of the physician concerned, whether or not he practices alone or in association with other physicians, whether or not he is married and has children, and whether or not he has any physical incapacity which might prevent him from doing certain types of service.

"It is hoped that every physician will cooperate with the Committee on Medical Preparedness and with the United States government by filling out this blank and returning it at the earliest possible moment. Obviously, as physicians are needed, an attempt will be made to supply them through this mechanism. If, however, conscription should become necessary, it is important to realize that physicians who have failed to cooperate will have to take the chance of being assigned to any kind of service which may offer, and perhaps with far less possibility of rendering the quality of aid they are capable of rendering."

Physicians Needed for Army Service

The physician, like every other American, has become actively interested in our national security and stands ready to contribute his services as required for military preparedness.

The immediate problem in this connection is one that concerns the War Department, and primarily the young physician. The War Department must procure sufficient additional personnel from the medical profession to augment the medical services of the Regular Army as the various increases are made in the strength of the Regular Army, as authorized by Congress to meet the partial emergency. The young physician is especially concerned because it is usually advantageous, and is often more convenient for him to serve with the Army.

Present plans of the War Department are designed to make service attractive and instructive for the young physician. If the physician holds a Medical Corps Reserve commission he can be ordered to active duty if he so requests. If he does not hold a commission, but is under 35 years of age and is a comparatively recent graduate of an accredited school, he may secure an appointment in the Medical Corps Reserve for the purpose of obtaining extended active duty for a period of one year or longer. Duty is given at general hospitals, station hospitals, and with tactical units, and embraces all fields of general and specialized medicine and surgery. Excellent postgraduate training is obtainable in connection with aviation medicine. After serving six months of active duty in the continental United States, a Reserve officer may request duty in Hawaii, Panama, or other United States territories and possessions. The initial period for duty is for one year and yearly extensions are obtainable thereafter until the international situation becomes more clarified and our domestic military program becomes stabilized.

Many young doctors who have served with the Army on extended active duty have taken the competitive examination for entrance into the Medical Corps of the Regular Army. Extended active duty affords an excellent opportunity for the physician to observe modern military medicine and the facilities that exist for a complete nad comprehensive medical practice.

Pay is according to rank, and, including subsistence and quarters allowances for an officer with dependents, amounts to an annual sum of $3,905 for a captain and $3,152 for a first lieutenant; or, without dependents, to an annual sum of $3,450 for a captain and $2,696 for a first lieutenant. In addition, reimbursement is made for travel to duty station and return.

Further information may be obtained by writing to the Surgeon General, U. S. Army, Washington, D. C.

Navy Medical Corps

The next examination for doctors of medicine desiring to enter the Medical Corps of the United States Navy will be held on August 19, 1940, at the following Naval Medical Department activities:

U. S. Naval Hospital, Chelsea, Massachusetts; U. S. Naval Hospital, Brooklyn, New York; Norfolk Naval Hospital, Portsmouth, Virginia; U. S. Naval Hospital, Pensacola, Florida; U. S. Naval Hospital, San Diego, California; Naval Medical Center, Washington, D. C.; U. S. Naval Hospital, Newport, Rhode Island; U. S. Naval Hospital, Philadelphia, Pennsylvania; U. S. Naval Hospital, Charleston, South Carolina; U. S. Naval Hospital, Great Lakes, Illinois; U. S. Naval Hospital, Mare Island, California; U. S. Naval Hospital, Puget Sound, Bremerton, Washington.

Graduates of Class "A" medical schools who have had an internship in a civilian hospital and who are physically and professionally qualified may be commissioner in the permanent Medical Corps of the Navy as Assistant Surgeons with the rank of lieutenant (junior grade). Applicants must be less than thirty-two (32) years of age at the time they receive their commissions, citizens of the United States, physically qualified for appointment as officers in the Medical Corps and must demonstrate their professional qualifications by competitive written, oral and practical examinations. The professional examination will embrace the subjects of: (1) general medicine, (2) general surgery, (3) obstetrics and gynecology, and (4) preventive medicine and medical jurisprudence.

The pay and allowances for assistant surgeons with the rank of lieutenant (junior grade) in the Medical Corps of the Navy is $2,699 per year if the officer has no dependents, and $3,158 per year if he has dependents.

Additional information regarding physcial requirements, etc., may be obtained by addressing a letter to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C. Applications must be completed and received in the Bureau of Medicine and Surgery prior to August 1, 1940 in order that authorization may reach the applicant in suffi-

cient time for him to appear for examination on August 19, 1940.

Serologic Tests for Syphilis

More than five years ago the Committee on Evaluation of Serodiagnostic Tests for Syphilis, in cooperation with the United States Public Health Service, conducted a study to evaluate original serologic tests for syphilis or modifications thereof in the United States. The results of this study were published shortly after the investigation was completed.

Consideration is now being given by the committee to the organization of a second evaluation study of original serologic tests for syphilis or modifications thereof within the next year. If the need for an investigation of this kind seems to justify the cost, invitations will be extended to the authors of such serologic tests who reside in the United States, or who may be able to participate by the designation of a serologist who will represent them in this country. The second evaluation study will be conducted utilizing methods comparable to those employed in the first study.

Serologists who have an original serologic test for syphilis or an original modification thereof and who desire to participate in the second evaluation study should submit their applications not later than October 1, 1940. The applications must be accompanied by a complete description of the technique of the author's serologic test or modification. All correspondence should be directed to the Surgeon General, United States Public Health Service, Washington, D. C.

Industrial Health Meeting

The Medical College of Virginia announces a symposium on industrial health which is to be held in the Baruch Auditorium, the Egyptian Building, Richmond, Virginia, on September 12 and 13.

For the night meeting of September 12, the program is semi-popular in nature. Doctor Victor G. Heiser, author of "An American Doctor's Odyssey," and now consultant to the Committee on Healthful Working Conditions of the National Association of Manufacturers, will be the principal speaker on the program. In addition to Doctor Heiser, Mr. J. J. Bloomfield, sanitary engineer, United States Public Health Service, and Mr. L. B. F. Raycroft, of the Electric Storage Battery Company, Philadelphia, will speak.

The speakers on the morning and afternoon programs include a number of the leading medical men in the industrial service of the nation. The American Medical Association's Council on Industrial Health will be represented by two members and Doctor C. M. Peterson, secretary of the Council.

A nominal registration fee of $5.00 will be charged for this symposium.

Eye and Ear Specialists

The American Academy of Ophthalmology and Otolaryngology will hold its forth-fifth annual convention in Cleveland, October 6 to 11, with headquarters at the Hotel Cleveland.

The academy, an organization of more than 2,500 specialists in diseases of the eye, ear, nose and throat, carries on an active program of education for its members. In addition to scientific papers, an elaborate series of courses is presented at each convention to bring the members up to date in their chosen fields. More than 100 of these teaching lectures will be offered this year.

In the past year arrangements have been made to extend the teaching activities to young physicians just entering on specialization. Home study courses are being prepared for any of these young men who wish to take them and their work will be supervised by members of the academy interested in improving the caliber of specialists in practice.

Osler at Old Blockley

"Osler at Old Blockley" a painting in oil by Dean Cornwell, was unveiled at the dedication of the Osler Memorial Building on the grounds of the Philadelphia General Hospital this past June

and was later exhibited at the American Medical Association convention in New York.

The painting depicts one of Osler's outstanding contributions to medicine, namely, bringing medical

students to the bedside of the patient for clinical study. In the painting Osler is shown at the side of an elderly patient on the hospital grounds. Surrounding Osler and the patient are internes who have stopped with him as they were on their way to the autopsy house to observe one of his famous postmortems. This autopsy house, now the only Osler memorial building in the United States, is shown in the background. This memorial was made possible by a grant from John Wyeth and brother.

"Osler at Old Blockley" is the second painting in the series "Pioneers of American Medicine" sponsored by John Wyeth and brother as part of a project to highlight the contributions of Americans to the advancement of medicine. "Beaumont and St. Martin" was the first painting in the series.

Colored reproductions of "Osler at Old Blockley", suitable for framing may be obtained free by addressing requests to THE WEST VIRGINIA MEDICAL JOURNAL, Box 787, Charleston.

The Lay Press

From the July 15 issue of the *Moundsville Journal* we glean the following comment on an editorial from our own state JOURNAL relating to the state's mental hospitals:

THE WEST VIRGINIA MEDICAL JOURNAL, published by the West Virginia Medical Association, in its issue dated for June, laments and deplores the condition of the state's mental hospitals. It says as the years roll by it becomes more and more apparent that our state hospitals will never reach anything like maximum efficiency until funds are provided for proper maintenance.

The magazine says that less than 50 cents per day per patient is provided for complete maintenance. Out of this fifteen cents goes for food. This amount is compared with the food allowance of 42 cents pre day for inmates of county jails. The article says if some of the jail money could be diverted to the insane everybody would profit but the sheriff.

Th's is pretty sharp comment. It is double-edged, bringing into bold relief at once the state's niggardly attitude toward the helpless mental sufferers and the excesses in the jail board racket.

Of course the insane cannot be organized. They have no way of bringing pressure on the legislature. The friends and next of kin of these helpless unfortunates are also powerless to overcome the neglect and the indifference. They are helpless to compete with the sheriff's association.

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Thus the situation goes merrily on of waste of public funds to fatten politicians on the one hand and to inflict cruelty on the weak and unfit charges on the other.

THE MEDICAL JOURNAL is not politically minded. The medical profession is not interested in political issues but in correcting a very grave abuse and neglect.

We do not know if the interim committee has given any thought to the twin evils which the doctors are agitating within their own circle. We do not know if the brain trust on which the interim committee relies ever heard of the situation. Probably not, because its objectives are lofty, not lowly and it perhaps cannot be bothered. Something should be done not later than next January.

Congress of Physical Therapy

The nineteenth annual scientific and clinical session of the American Congress of Physical Therapy will be held September 2, 3, 4, 5, and 6, 1940, at the Hotel Statler, Cleveland, Ohio. For information concerning the seminar and preliminary program of the convention proper, address American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

Supreme Court Ruling

"Recently a widely circulated publication has asserted that the Supreme Court of the United States has definitely decided that the practice of medicine is a trade within the meaning of the Sherman Anti-Trust Law of the United States. Such a statement is not correct," *The Journal of the American Medical Association* for July 20 declares in an editorial.

"The facts are as follows: On July 26, 1939, the District Court of the United States for the District of Columbia sustained the demurrer of the defendants to the indictment in this case and dismissed the charge against the defendants. The government appealed this ruling to the United States Court of Appeals for the District of Columbia. On March 4, 1940, the Court of Appeals filed its opinion reversing the decision of the District Court and remanded the case to the District Court for a trial on the merits of the indictment. Thereupon the defendants petitioned the Supreme Court of the United States to grant a writ of certiorari to review the decision of the Court of Appeals. The United States filed its brief and argument in opposition to the petition of the defendants for a writ of certiorari and therein asked the Supreme Court of the United

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*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES. Vol. 23, No. 2, pages 201-206, March, 1939.

JOHN WYETH & BROTHER, INCORPORATED, PHILADELPHIA, PA.

States not to review the decision of the Court of Appeals at this time because the government argued that the judgment of the Court of Appeals was not final and the Supreme Court ought not review this case until after a trial was had and all the facts appeared in the record. In its brief the government conceded that the question whether the practice of medicine was a trade was a novel one of sufficient importance for the Supreme Court of the United States to settle but urged that this question be not settled by the Supreme Court of the United States until after a trial of the case, when all the facts would fully appear of record. Apparently the Supreme Court of the United States accepted the argument and suggestion of the government and declined to review the decision of the Court of Appeals at this time.

"The fact that the Supreme Court of the United States declined to review the decision of the Court of Appeals at this time does not mean, as all lawyers know, that the Supreme Court of the United States approved the opinion of the Court of Appeals but means only that for the present the Supreme Court of the United States is satisfied with the action of the Court of Appeals in sending the case back to the District Court for a trial on the merits. If the result of such a trial should be adverse to the defendants, the question whether the practice of medicine is a trade within the meaning of the language used in the Sherman Anti-Trust Law would still be an open question for the Supreme Court of the Untied States to decide. The Supreme Court of the United States has not yet decided that the practice of medicine in the District of Columbia is a trade within the meaning of the language of the Sherman Anti-Trust Law."

Service in Britain

"The British Embassy is registering the names of American physicians who volunteer for service in the United Kingdom in the treatment of war casualties so as to have available a list of men who may be called on if the need arises," *The Journal of the American Medical Association* for June 29 reports. "The statement is made that these men are required mainly for the treatment of civilian casualties and that there is no question of enrolling these men in the medical services of the war forces."

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Army Medical Corps

"The office of the Surgeon General of the United States Army Medical Corps points out there are now authorized for the army of 280,000 an additional 1,283 Medical Reserve officers," *The Journal of the American Medical Association* for June 29 says. "Of this number only 363 have been procured, leaving 920 still required. Approximately 600 medical officers will be needed for the additional 95,000 men. It is stated that the War Department will authorize active duty for lieutenants to age 35 and captains to age 40. The duty will be for one year, to be renewed as required. Physicians who are anxious to obtain some military experience, and particularly young physicians who are seeking at this time an outlet for their services, will find here an opportunity to accept service for one year or for more if they desire it to obtain experience, and an income, and at the same time fulfill a patriotic duty."

Resuscitation

It is improbable that human beings who have been completely submerged for more than ten minutes can be resuscitated, *The Journal of the American Medical Association* for June 29 declares. Although successful resuscitation has been reported even when one-half hour to three hours supposedly had elapsed from the time of initial submersion to the institution of treatment, the reliability of such reports is subject to question.

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Oral Pollen Treatment

The effectiveness of the oral (mouth) administration of ragweed pollen extracts for the treatment of hay fever is, at the highest estimate, of a minor grade, and the method is definitely inferior to injection treatment, seven investigators conclude in a cooperative study reported in *The Journal of the American Medical Association* for July 6.

Because of the conflicting results of reports of oral pollen treatment in medical literature and because of the potential importance of such a method, several groups of investigators working independently in different clinics undertook in the summer of 1939 a joint project for its evaluation. These workers, who present their conclusions in the current issue of *The Journal*, are Samuel M. Feinberg, M.D., Francis L. Foran, M.D., Meyer R. Lichtenstein, M.D., Emanuel Padnos, M.D., Ben Z. Rappaport M.D., and Michael Zeller, M.D., Chicago, and John Sheldon, M.D., Ann Arbor, Michigan.

While the results of oral pollen treatment showed considerable variation, with the percentage of patients improved ranging from 100 in a small series of eleven children to 14.8 in a series of twenty-eight patients, the statistics of the three larger groups studied showed a much closer approximation. "The pooled results of all the clinics yield the fact that in 29.8 per cent of 141 cases there was an apparent improvement under oral pollen treatment," the authors state. "That this percentage is more impressive in the statistics than it was in the clinics is made apparent by the further breakdown of the figures into degrees of improvement. From these it appears that only two (1.4 per cent) of the 141 patients obtained 'excellent' results; that twelve (8.5 per cent) obtained 'good' results, and that the remaining twenty-eight (19.9 per cent) showed 'slight' to 'moderate' improvement. Moreover, it was in the relief of asthma, the touchstone of pollen treatment, that the oral treatment showed to least advantage."

In a comparative study of oral and injection treatment made at one of the clinics, only 25 per cent of those treated orally reported improvement compared with 56 per cent of those treated by injection. The results of the latter, the report says, "are somewhat less favorable than general experi-

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ence with this mode of treatment but sharply superior to those of the companion oral group."

Another part of the study was a comparison of the results of oral pollen treatment with those of giving the patient pills made of starch, which could have no specific effect but might have a beneficial psychologic effect. Such a pill is called a "placebo." "The 21.9 percentage of improvement in the thirty-two cases in which placebo capsules were received," the authors say, "approximates the 29.8 per cent of improvement noted in the combined group given oral pollen. This becomes more striking in that two (6.25 per cent) of the patients receiving the starch capsules reported 'excellent' relief compared with only 1.4 per cent of those treated with pollen capsules.

"The implications of these data are apparent and challenging. At the very least, the placebo report detracts substantially from the significance of the percentages of improvement with oral pollen, if it does not wholly nullify it. We have here one more example of the need of caution in interpreting results based, however necessarily, on clinical impressions in the absence of sharply defined objective criteria.

"In our appraisal of oral pollen treatment on the basis of our combined results the opinions of the investigators diverge from a complete rejection to a limited acceptance.

"We concur in the opinion that the oral ingestion of pollen is a safe procedure; that gastrointestinal reactions are frequent and troublesome, sometimes severe, but not dangerous, and that its effectiveness is, at the highest estimate, of a minor grade, particularly in the control of asthma, and definitely inferior to that obtainable by the injection beneath the skin or into the veins of pollen extract."

Pulmonary Embolism

"Many conditioning factors may play a part in the formation of thrombosis and embolism," *The Journal of the American Medical Association* for July 20 declares. Thrombosis is the plugging of a blood vessel or of one of the cavities of the heart by means of a clot or plug of coagulated blood which remains at the point of its formation. Embolism is the blocking of a blood vessel by a clot or obstruction which has been brought from some other part of the body by the blood stream.

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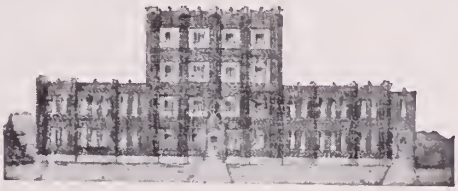

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A New Type of Jaundice

A new type of jaundice which follows arsphenamine treatment of syphilis is described by Franklin M. Hanger, Jr., M.D., and Alexander B. Gutman, M.D., New York, who report twelve cases in *The Journal of the American Medical Association* for July 27.

The jaundice appears early in the course of treatment and is due to obstruction of the bile passages within the liver rather than to an inflammatory disorder of the liver tissue itself, a type of case which occurs late and has been reported previously. "This distinction," the two workers state, "has practical implications bearing on proper treatment." The condition in four of the authors' twelve patients so strongly suggested obstruction of the bile duct outside of the liver that exploratory operations were performed.

The administration of arsphenamine in cases with the obstructive type of jaundice should be interrupted, perhaps discontinued.

It seems unlikely from the nature of the jaundice described, the authors say, "that syphilis of the liver, arsphenamine overdosage and intercurrent 'catarrhal' jaundice are important causative factors.

Prescribed Contraception

The comparison of twenty-five criminal abortions after use of scientific contraception with 127 before, in a group of 500 private cases, indicates the ability of medically prescribed contraception to decrease the number of criminal abortions to one-fifth, with subsequent prevention of maternal ailments and possible sterility, Marie Pichel Warner, M.D., New York, declares in *The Journal of the American Medical Association* for July 27 in an analysis of the cases. The majority of abortions occurred in married women, she says.

The women in the group were of middle class New York City families of different religious denominations. All but three of them were white. Half of the group, Dr. Warner reports, stated that inadequate income was their main reason for wanting to avoid further pregnancies. "The majority of women," she continues, "sought contraceptive advice during the first year of marriage, the remainder from one to thirty years after marriage."

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Equine Encephalomyelitis

A laboratory accident, which proved fatal, revealed the heretofore undetermined human incubation period of the western strain of equine encephalomyelitis, a virus disease which is similar to so-called "sleeping sickness," Ferdinand C. Helwig, M.D., Kansas City, Mo., reveals in *The Journal of the American Medical Association* for July 27.

The victim, a prominent veterinarian, was working with the virus of the disease when, apparently because of too much power being applied to a laboratory machine, the virus was spattered all over him. Fourteen days after this accident the victim became ill and eight days later died. He had had no contact with the disease for weeks before or subsequent to the accident. Dr. Helwig says that the virus most probably entered through the respiratory passages.

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REMEDIAL SPEECH

EDWARD C. ARMBRECHT, D.D.S., F.I.C.A., F.A.C.D. FRANK HIPPS, A.M., Sp.D.
Wheeling, West Virginia

Consider the future that lies before the child with a speech defect; it is filled with annoyances to the child and to the listener, the child struggling to be understood and the listener trying to understand. If you can help one of these unfortunate children you surely will earn his everlasting gratitude. Aside from a scientific motive this seems to express the basic reason why our service in the hospitals became interested in defective speech. The first remedial speech class was held in 1931 for the purpose of diagnosing the speech defects of a group of operated cleft lip and cleft palate children. These classes continued to be held semi-annually, however, with not much noticeable progress until 1938 when the State Department of Public Assistance, Crippled Children's Division, supported a remedial speech clinic. In 1939 the Sarah Whitaker Glass Oral Foundation was organized and included in its program the work of this remedial speech clinic. At the outset a specially equipped cleft palate ward was donated, the walls of which were decorated by murals, designed to hold the attention of the convalescent patient and encourage him to mimic and imitate such expressions and sounds thought to be beneficial to him in overcoming defective speech. Volunteer workers were obtained from the Junior League membership, who prepared for the teaching work by attending several seminars sponsored by the Foundation. Diagnostic clinics are held every other month throughout the year, at which time all types of defective speech patients may register and after a history, examination and diagnosis is made, the case is then assigned to a volunteer Junior Leaguer who carries

THE AUTHORS

Dr. Armbrecht graduated from the University of Pennsylvania and took postgraduate work at Duke University. He is a Fellow of the International College of Anesthestists and the American College of Dentistry.

Mr. Hipps of West Liberty received his A.B. and M.A. degrees from Duquesne and graduated in speech from the Kings School of Oratory.

out the recommended lesson in her bi-weekly classes. From time to time stubborn cases are brought back to the diagnostic clinics for further consultation.

MECHANISM OF SPEECH

If one has perfect speech little thought is given as to how it is produced. Speech is a group of reflexes made possible through all the parts of a mechanism; namely, the receptor, the association and the effector systems. In speech the sound made by the vocal cords is enhanced by air spaces in the head and throat, the sinuses, nasal passages, mouth and larynx. The fact that a deaf man cannot respond to the stimulus of a spoken word nor can one with a diseased larynx respond by production of speech, certainly demonstrates that the vital mechanism of man's speech must be normal in structure and function in order that he may speak intelligibly. The receptor mechanism is closely associated with the visual, auditory and touch senses, definitely requiring them to be within normal functional limits.

Fig. 1. Mural in cleft palate ward, Ohio Valley General Hospital, painted by Mrs. Agra Bennett McKinley.

A child first imitates sounds and then associates them with concrete objects. Some of these sounds for example, *e-goo-woo-moo-sh-th-boo* are all closely related with the same muscles used in the act of sucking. Furthermore the same set of muscles used in mastication are also essential for speech development. Refinement of speech takes place with eruption of the teeth and growth of the associated parts. The reception of ideas or impressions leads directly from the receptor system as in reading to the conscious understanding or association system which connects directly with the expressive or effector system as in writing.

Mispronunciations of words caused by deformities or wrong habits acquired by the organs of speech may be described as speech defects. In cases of malformation correction is desirable; however, many other defects due entirely to faulty habits can be cured. In the latter cases, once proven that the patient can pronounce the sound correctly, it only remains then for him to be guided intelligently and to practice conscientiously so that eventually a complete cure will be obtained.

Fig. 2. Mural in cleft palate ward, Ohio Valley General Hospital, painted by Mrs. Agra Bennett McKinley.

CLASSIFICATION OF SPEECH DEFECTS

If and when a person departs from certain accepted standards of speech in his locality that person may be said to have an impediment. The causes of such speech disorders fall under four types as follows: (1) congenital, (2) pathological, (3) wrong habits, and (4) mental deficiency. The teacher must have the ability to recognize without difficulty wrong English sounds as well as non-English sounds and also to know about certain key words; for example, if a patient can pronounce the word "assassin" clearly it demonstrates that the palate has perfect function. It is therefore obvious that when defective speech patients present themselves it is essential to ascertain the cause of their complaint. With this in mind a complete history is taken along with a physical examination, the latter emphasizing such tests as hearing, eyesight, nervous and muscular stability. Upon the basis of these findings a diagnosis

is made and the case classified. The mentally deficient children were not admitted to this clinic and therefore are not included in the following classification:

I. Indistinct articulation.
II. Sound substitution.
III. Nasalized speech.
IV. Stammering.
V. Cleft lip and cleft palate speech.

I. Indistinct Articulation: Wrong habits of speech may be a forerunner of this type inasmuch as it is not due to the voice quality but rather to the lack of clear enunciation.

Fig. 3. Ankyloglossia

Even though good resonant vowels can be produced it does not mean that such will be the case in some consonants, because, a consonant is a sound wherein the mouth air is stopped or blown through very small openings causing various degrees of friction. In this manner such fricative sounds are produced as "busy", "zebra", "fever." It also follows that when a speaker lacks clear articulation the consonants which divide the words into syllables are not pronounced distinctly. Therefore a knowledge of the consonants in regard to the organs and manner of articulation is necessary for clear speech.

A GROUP OF CONSONANTS*

	Bi-labial	Labiodental	Dental	Alveolar	Palatal	Velar
Plosive....	P			T		K
Nasal.....	M			N		ing
Rolled				R		
Fricative ..		V-F	th	S-Z		
Semi-vowels					J	

*Examples may be mentioned such as the Southern and Cockney dialects and such indistinctness heard in jaw fracture cases who talk through their teeth, due primarily to their inability to open their mouth.

II. Sound Substitution: In this group we note that certain sounds cannot be pronounced correctly and the patient will substitute another; some of the sounds most commonly mispronounced are *s-f-r* and *sh* as in *show*. Others may be likened to the ordinary sound of lisping wherein the tip of the tongue remains between the teeth or against the incisal edge of the upper anterior teeth. Therefore a correction requires that the tongue be pushed back so that it is not in constant apposition with the teeth; for example, the *th* as in *thin* for the *s* as in *sister* and of *th* as in *then* instead of z as in *zebra*. By having the patient place the finger between the upper and lower teeth and instructing him to say *th* as in *thin* in all probability an *s* will be forthcoming; herein is a method to teach the pronunciation of *s*. By practice various positions of the tongue may be acquired until he gets a good variety of *s*. It is not the purpose here to discuss all of these particular substitution sounds. However, it is suggested that at the time a child is in for diagnosis all of his substitution sounds be listed on his history chart. The causes of lisping can be thumb sucking, hypertrophied tonsils, ankyloglossia, prognathism, open bite, hemiatrophy of the

Fig. 4. Plaster models of cases shown in Figs. 5 and 6.

tongue or the palate, inability to pronounce sounds correctly because of the lack of knowledge, or finally laziness in the use of the speech organs. (Figs. 3, 4, 5, 6).

III. Nasalized Speech: Except for the nasal consonants other sounds require that air must not escape through the nose. Therefore if nasality accompanies all sound (except *m-n-ing*) it is evident that the soft palate

does not make the proper sealing contact at a point in the region of the superior constrictor in the pharynx, called Passavant's cushion. However nasalized speech may not only be produced by insufficient palate but also other conditions such as enlarged ade-

Fig. 5. Prognathism

Fig. 6. Marked open bite

noids or frequent head colds both of which may predispose to habitual mouth breathing. Consequently the patient is prevented from talking through his nose, thus making the clear pronunciation of those sounds *ing-m-n* impossible. (Fig. 7). In addition, because of his inability to pronounce these nasal consonants, he is likely to use replacements, for example, the *l* as in *like* for the *n* as in *pencil* (*pelcil*). The degree of nasality naturally

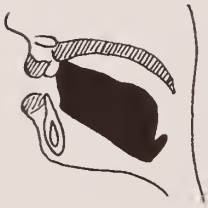

Fig. 7
Nasal Consonant "N"
1. Lips apart.
2. Teeth apart.
3. Tongue on palate.
4. Soft palate relaxed.

Fig. 8

Lips

"Soon" "See"

varies with the extent of the deformity, the function of the parts and probably the intelligence of the patient. In all cases in which there is a nasality of tone it is essential to search out its basic cause so that proper exercises necessary for its correction may be instituted, for example:

(1) Say, *ik-ak-k-p-t*, sing *a* and with the help of a mirror watch the movement of the palate upwards.

(2) Direct the air alternately through the oral cavity (*a*) and through the oral cavity as well as the nose by the movement of the soft palate (*e*).

(3) Depress posterior surface of the tongue and with the mirror note how the palate rises. (*Ah*).

(4) To these should be added deep breathing exercises at regular intervals in the open air.

IV. Stammering: This is a disturbance in rhythm of speech and is manifested by a spasmodic hesitation, one of the most serious

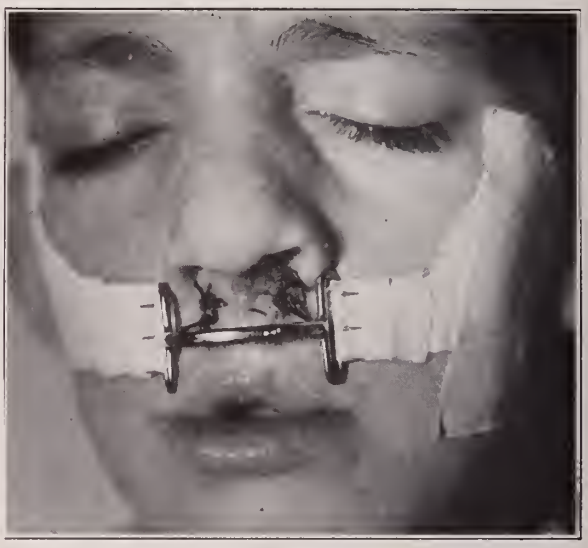

Fig. 9. Logan bow in situ

handicaps man is forced to face. It is due simply to nervousness and not to a mental defect and seldom do we find anything abnormal in the organs of speech. However,

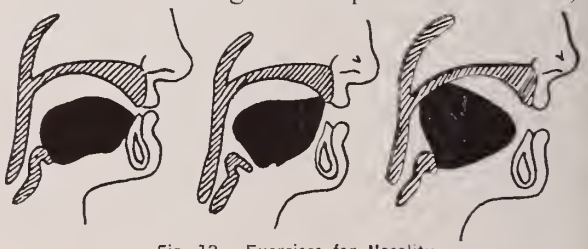

Fig. 10. Exercises for Nasality

it can be relieved in all cases and cured in many. So often this type of patient develops an inferiority complex and is self-conscious

in the presence of other people. According to statistics this group numbers over one million in the United States alone; many come from homes of nervous parents and frequently give a history of being whipped and punished for their inability to talk clearly. The patient must learn, first of all, to face the realities of life and be taught to speak very slowly in the presence of others, thereby helping him to control his nervous tension. Train the child to keep the jaw firm and to move the abdominal muscles outward when saying a word or phrase. Say the vowels very slowly but firmly, breathing deeply after each vowel, using a low tone and never speaking long phrases in one breath.

A-E-I-O-U

Place *b* before the vowels, but do not stress the consonant. Draw the effort away from the lips and the tip of the tongue making the tone as deep as possible.

Ba-Be-Bi-Bo-Bu

Place other consonants before the vowels. (*l-d-s-t-n*). Repeat and repeat, always stressing the vowels. Count 1-2, 3-4, (breathing after each second number) 5-6, 7-8, 9-10.

It has been found that if these patients are isolated, yet in telephonic communication with the teacher in another room an ideal situation exists for their training. They learn, by this method, to speak slowly and not to be so self-conscious in the presence of another.

V. Cleft Lip and Cleft Palate: The normal contour and movements of face muscles are responsible for the expression of an individual. This same group of muscles is also involved in certain diseases, *i.e.*, the facies in tic douloureux, tetanus, strychnine poisoning, exophthalmic goiter, Bell's palsy, etc. Facial expression helps to emphasize the spoken word as in the emotions of pain, fear and anxiety. The importance of the lips in speech is quite obvious, especially if we examine individuals who have become face talkers who utilize excessively the compressor nasi and corrugator superciliary muscles. The fact that one is able to interpret spoken words by lip reading demonstrates conclusively the value of the lips in speech. Lack of continuity in the lip is a direct cause of defective speech and surgical correction is necessray. (Figs. 11, 12). Once rehabilitation is accomplished a definite lesson routine is indicated; for example, the act of whistling and saying the words *see-soon*. (Figs. 8, 9).

Because of the importance of the palate in speech function the patient with a cleft palate is seriously handicapped. Various degrees of this deformity are encountered and upon this

Fig. 12. Cleft lip and nose defect

Fig. 11. Unilateral cleft lip

fact the success of surgery rests, as well as subsequent speech correction. The anterior roof of the mouth is termed the hard palate whereas the soft palate begins where the bony base stops. The soft palate's function is to open and close the passage leading from the mouth to the nose and being movable it permits two positions, one leaving a free passage for the breath through the nose with the mouth shut, and the other closing off the nose as when a patient breathes out through the mouth (Figs. 13, 14, 15, 16). On the other hand if the soft palate has been surgically corrected and functions normally the breath will continue to pass through the nose and mouth unless the cleft in the hard palate is closed. In the event surgery is impractical then it is possible to construct an obturator which will permit at least better speech than if it is not utilized. Practically all these are difficult cases for the teacher of speech, because usually he is required to aid the patient in getting rid of the wrong habits of speech before teaching him the new and correct sounds. (Figs. 17, 18, 19).

The training of the breath flow through the nose is an important preliminary step in speech training. The effects of this deformity on speech may be summed up briefly as follows:

(a) Impossible to make stops as *p-b-t-k-g* for which the soft palate must be raised permitting the necessary explosion sound.

(b) Substitution of *n* for *l*.

(c) Fricative sounds, *f-v-s-z*, all become somewhat of a snort.

(d) Vowels, *a-e-i-o-u* are all nasalized because breath passes through the mouth and the nose at the same time.

(e) Voice is poor with a muffled and obscure quality because speech organs are weak.

OBJECTIVES OF REMEDIAL SPEECH TRAINING

Granted that speech is a means of communication among mankind, then good speech is an essential asset to all and therefore training of the speech organs will improve the individual's status. Research in physics, phonetics, physiology and psychology has proven that speech is a biological phenomenon depending upon highly specialized muscle and nerve activity, the development of which is fundamentally a distinguishing point between man and animal. Speech training should be based on an idealistic plan, and by using certain tried and true methods along with conscientious, sincere and honest efforts, the teacher will finally develop a workable plan for each individual case.

In our experience we have found certain working material useful in the detection and treatment of speech defects, for example,

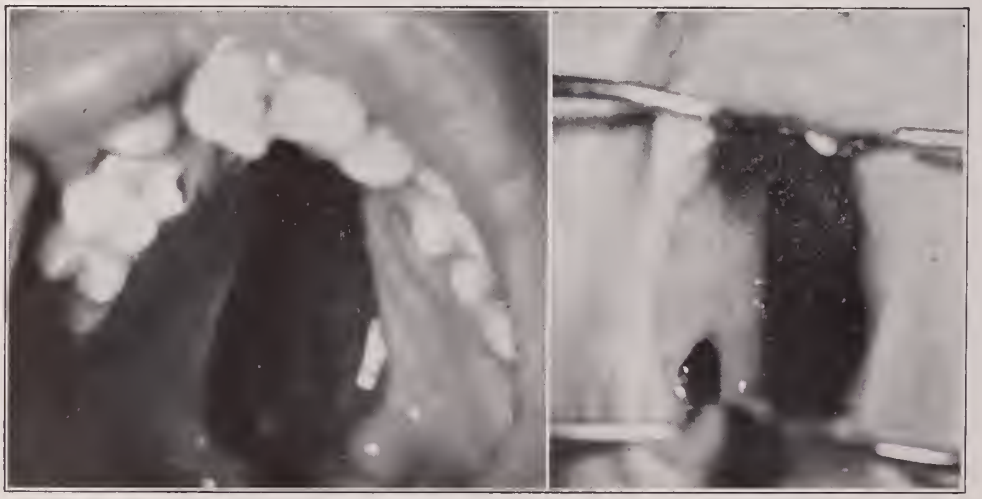

Fig. 13 Fig. 14

Various degrees of cleft palate malformation.

ballons, bubble pipes, horns, candle flame, feathers and mouth props. Juvenile victrola records have been very valuable in gaining the confidence of the child patient. A resumé of remedial speech lessons was sound recorded, thus making it possible for the volunteer teachers to have instructive information on hand at all class sessions. In a few instances we recorded the speaking voice of selected patients in order to demonstrate just how the defects in their speech sounded and this means was found to be very valuable to certain patients as well as the teachers. In addition oral gymnastics are recommended in the form of words, such as *noon, wick, pure, caw, ring*, sentences, for example: *Sister Susie sewed shirts for the sailors by the seashore*, and finally rhymes as:

Jack and Jill went up the hill
To get a pail of water
Jack fell down and broke his crown
And Jill came tumbling after.

Roses are red
Violets are blue
Sugar is sweet
And so are you.

CASE HISTORIES

In our remedial speech clinic there has been a total of 97 patients registered. The analysis below offers an explanation of the type of their speech defects. Several patients were picked at random and their case histories presented in order to explain some of the methods used in our clinic.

A. Congenital 33
  1. Cleft palate.....15
  2. Cleft lip..... 4
  3. Cleft palate and cleft lip.....14
B. Pathological 12
  1. Aphrasia 6
  2. Nasalized speech:
    a. Adenoid and tonsils..... 3
    b. Chronic head colds..... 3
C. Wrong habits.....47
  1. Stammering 15
  2. Sound substitution (lisping)... 4
  3. Indistinct speech.....28
D. Mental defects..... 5
  Total.....97

No. 29: Date, 10/4/39. Name, B. S.; age, 16; father's name, George; mother's name, Mary; address, 2837 Eoff St.; father's occupation, not working; mother's occupation, housework by the day; date of birth of patient, July 17, 1924; nationality, American; what age did patient start talking, six years; does patient have cleft lip, no; cleft palate, no; teeth normal in number, yes; articulation, fair; operations—type, none; doctors, Professor Frank Hipps; school attending, Webster; grade, sixth; teacher, Mrs. Nieber; I.Q., poor; brothers, two; sisters, none; any other family member afflicted in speech, no; is patient alert, no; well, yes; attitude, fair; does patient have any other deformities, no.

Signed—H. A.

Diagnosis: Indistinct speech.

Examination: (1) Oral condition—good; (2) Speech condition—lazy speech habits; unable to

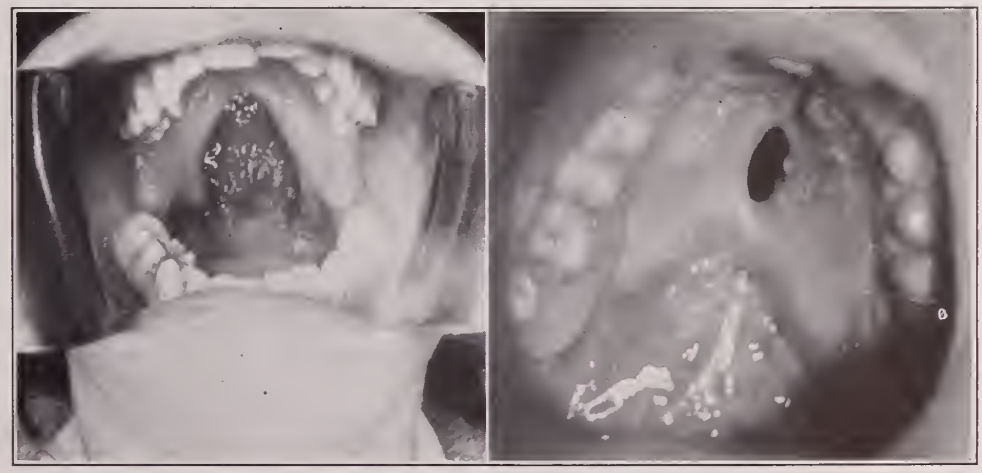

Fig. 15 Fig. 16
Various degrees of cleft palate malformation.

whistle; (3) Recommended lessons—count one to ten; say: la-la-la, lo-lo-lo, ba-ba-ba, ik-oh-ray; practice s as in sister, soon, see, sun.

No. 45: Date 12/6/39. Name, R. M. C.; age, 12; father's name, George W.; mother's name, Mary E.; address, 518 South Penn St.; telephone, Whg. 3674; father's occupation, insurance salesman; mother's occupation, housewife; date of birth of patient, July 24, 1927; nationality, American; what age did patient start talking, 16 months; does patient have cleft lip, no; teeth normal in number, yes; articulation, fair; operations—type, mastoidectomy, tonsillectomy; doctor, Professor Frank Hipps; school attending, Madison; grade, fourth; teacher, Miss Dorsey; brothers, none; sisters, none; any other family member afflicted in speech, no; is patient alert, yes; attitude, good; does patient have any other deformities, no.

Signed—K. M.

Diagnosis: Sound substitution (lisping).

Examination: Oral condition—good; tongue unwieldly. Speech condition: Sound substitution—lisping; (1) th for s in sister (thithter); (2) th for s in six (thixth); tongue hugs the upper anterior teeth. Recommended lessons: Must correct tongue placement; spread and contract tongue; exercise tongue by pointing, curling, bunching and furrowing; maintain a clean tongue; use mirror in tongue drills.

No. 71: Date, 2/6/40. Name, M. P.; age, eight; father's name, Paul H.; mother's name, Leonora; address, Children's Home; father's occupation, invalid; mother's occupation, housewife; date of birth of patient, April, 1932; nationality, American; what age did patient start talking, two years; does patient have cleft lip, no; cleft palate, no; teeth normal in number, malocclusion marked; articulation, poor; operations—type, none; doctor, Professor Frank Hipps; school attending, Woodsdale; grade, two; teacher, Miss Roberts; I.Q., fair; brothers, one; sisters, none; any other family member afflicted in speech, no; is patient alert, yes; well, yes; attitude, good; does patient have any other deformities, no.

Signed—B. H.

Diagnosis: Nasalized speech.

Examination: (1) Oral condition—fair; malocclusion marked. (2) Speech condition—nasalized. (3) Recommended lessons: Advise removal of tonsils and adenoids before proceeding with speech training after which: Say—ik-ah-assassin-p-t-k-m-n-ing. Sing vowels (use mirror to see palate). Breathing exercises.

No. 80: Date, 2/7/40. Name, C. S.; age, 12; father's name, Charles; mother's name, Clara; address, 3737 Wetzel Street; father's occupation, truck helper; mother's occupation, stamping works; date of birth of patient, November 21, 1927; nationality, American; what age did patient start talking, two years; does patient have cleft lip, no; cleft palate, no; teeth normal in number, yes; articulation, good; operations—type, tonsils; doctor, Professor Frank Hipps; school attending, Ritchie;

Fig. 17. Obturator in situ.

Fig. 18. Modern obturator after J. J. Fitz-Gibbon.

Fig. 19. Obturator constructed by Dr. S. P. Hullihen.

grade, seventh; teacher, Miss Watt; I.Q., fair; brothers, none; sisters, two; any other family member afflicted in speech, no; is patient alert, yes; well, yes; attitude, good; does patient have any other deformities, no.

Signed—J. H.

Diagnosis: Stammering.

Examination: (1) Oral condition—good; (2) speech condition—articulation, good; stammers; (3) recommended lessons—encourage self-confidence; telephone conversations; reading and counting aloud; singing vowels; whistling; breathing exercises.

No. 79: Date, 2/6/40. Name, H. V. P.; age, eight; father's name, John; mother's name, Anna; address, 113 17th Street; telephone, Whg. 4958; father's occupation, not working; mother's occupation, housewife; date of birth of patient, April 4, 1931; nationality, Irish; what age did patient start talking, one and one-half years; does patient have cleft lip, no; cleft palate, no; teeth normal in number, no; articulation, good; operations—type, tonsils and adenoids; doctor, Professor Frank Hipps; school attending, Union; grade, third; teacher, Miss Wallace; I.Q., fair; brothers, one; sisters, none; any other family member afflicted in speech, no; is patient alert, yes; well, yes; attitude, good; does patient have any other deformities, no.

Signed—B. H.

Diagnosis: Stammering.

Examination: (1) Oral condition—fair; retained roots and stains; advise extractions. (2) Speech condition—articulation, good; stammers. (3) Recommended lessons—encourage self-confidence; telephone conversations; reading and counting aloud; singing vowels; whistling; breathing exercises.

No. 17: Date, October, 1939. Name, A. M.; age, 20; father's name, Frank; mother's name, Mary C.; address, 96½ 15th St.; telephone, Whg. 891-J; father's occupation, none; mother's occupation, housewife; date of birth of patient, September 7, 1919; nationality, German-American born; what age did patient start talking, not known; does patient have cleft lip, yes; cleft palate, yes; teeth normal in number, yes; articulation, fair; operations—type, cheiloplasty, 1937; palatorrhophy 1937-1939; doctor, Edward C. Armbrecht; occupation, reporter; I.Q., good; employer, Wheeling Intelligencer; brothers, seven; sisters, one; any other family member afflicted in speech, no; is patient alert, yes; well, yes; attitude, good; does patient have any other deformities, no.

Signed—K. M.

Diagnosis: Cleft lip and cleft palate.

Examination: (1) Oral condition—successful closure of cleft palate and cleft lip. (2) Speech condition: Nasalized speech—a. balloon test, positive; b. candle test, positive; c. feather test, positive. (2) Recommended lessons—yawning with mouth closed; say: ah-ik-oo-two-three-assassin–sister–see–soon; practice whistling; sing the vowels; breathing exercises.

No. 24: Date, October, 1939. Name, J. M.; age, 21; father's name, Steve; mother's name, Mary; address, 294 Highland Ave., Warwood; telephone, War. 241-J; mother and father, deceased; date of birth of patient, September 11, 1918; nationality, American-Croatian; what age did patient start talking, not known; does patient have cleft lip, repaired in 1923; cleft palate, yes; teeth normal in number, yes; articulation, fair; operations — type, palatorrhaphy, 1939; second stage, 1940; doctor, Edward C. Armbrecht; occupation, miner; I.Q., fair; employer, Costanza Coal Company; brothers, one; sisters, three; any other family member afflicted in speech, no; is patient alert, yes; well, yes; attitude, good; does patient have any other deformities, no.

Signed—A. L. I.

Diagnosis: Cleft lip and cleft palate.

Examination: (1) Oral condition—fair; successful closure of cleft palate and cleft lip; several infected teeth. (2) Speech condition: Nasalized speech—a. balloon test, positive; b. candle test, positive; c. feather test, positive. (3) Recommended lessons—yawning with mouth closed; say: ah-ik-oo-two-three-assassin-sister-see-soon; practice whistling; sing the vowels; breathing exercises.

No. 92: Date, 2/20/40. Name, S. J. A.; age, nine; father's name, Albert; mother's name, Minnie; address, 400 Warwood Ave.; telephone, War. 340-R; father's occupation, machinist; mother's occupation, housewife; date of birth of patient, August 1, 1931; nationality, American; what age did patient start talking, two years; does patient have cleft lip, no; cleft palate, yes; teeth normal in number, no; articulation, fair; opera-

tions—type, palatorrhaphy, Brown set-back, 1940; doctor, Edward C. Armbrecht; school attending, Warwood Public; grade, fourth; teacher, Miss Bradford; I.Q., good; brothers, two; sisters, two; any other family member afflicted in speech, no; is patient alert, yes; well, underweight; attitude, good; does patient have any other deformities, no.

Signed—J. G.

Diagnosis: Cleft palate.

Examination: (1) Oral condition—fair; successful closure of cleft palate; several missing teeth; several carious teeth. (2) Speech condition: Nasalized speech—a. balloon test, positive; b. candle test, positive; c. feather test, positive. (3) Recommended lessons—yawning with mouth closed; say: ah-ik-oo-two-three-assassin-sister-see-soon; practice whistling; sing the vowels; breathing exercises.

CONCLUSION

1. It is essential that all cases admitted to a remedial speech clinic be classified before any lesson plan is advised.

2. The voice is a wind instrument, which depends upon the vital mechanisms for normal speech production.

3. The child between the age of five and twelve is best for the remedial speech training.

4. The cooperation and intelligence of the patient along with the patience of the teacher are all important factors in obtaining the best results.

5. Finally, it has been a source of joy and pride for the teachers in our clinic to help these patients attain better speech and a normal outlook on life.

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Dietary Habits

Diet may play a part in causing many other ailments besides those commonly recognized as dietary deficiency diseases, *Hygeia, The Health Magazine* points out. Among these are certain forms of heart disease, hardening of the arteries, arthritis, chronic stomach trouble, diabetes and occasionally an unexplained headache. It has been found that a change in the dietary habits of patients suffering from these diseases to a diet termed "protective" not only mitigated their distressing symptoms but actually restored the soundness of the injured tissue.

DIAGNOSIS AND MANAGEMENT OF UNUSUAL PRESENTATIONS DURING LABOR*

By H. H. RITTER, M. D.
Montgomery, West Virginia

A DISCUSSION of this sort is merely in the nature of a review. All are familiar with the conditions to be considered. The diagnosis is usually obvious, but at times the management may be difficult. So, this paper will be mainly concerned with the management of unusual presentations which are not complicated by disproportion, uterine abnormalities, tumors, etc.

First, let us consider the most common which is the occipito-posterior presentation. The occurrence is perhaps greater than one would suppose at first thought. Numerous statistical studies have been made but a fair estimate is probably 20 to 25 per cent of all vertex presentations for the ROP variety and about five per cent for the LOP variety.

Abdominal palpation will reveal the breech in the fundus, the small parts anterior with the cephalic prominence anterior-lateral and on the same side as the small parts. When the small parts are anterior an occiput-posterior should always be suspected.

Vaginal examination will show the sagittal suture usually in the right oblique diameter with the Y suture posterior and the large fontanel at the anterior end of the suture. If the head is well flexed the large fontanel may not be felt at all.

The location of the fetal heart sounds is usually of no aid.

The mechanism of labor is the same as in the anterior varieties with the exception of the extent of internal rotation. This greater degree of internal rotation that is necessary naturally requires more time. The average duration of second stage labor will be about one hour in the multipara and about two hours in the primipara.

*Read before the Boone County Medical Society at Madison, on June 27, 1940.

THE AUTHOR

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Internal rotation usually occurs so that the occiput impinges on the symphysis and delivery proceeds as in the anterior positions. However, rotation may be incomplete, may turn to a direct occiput posterior or may present in the same position. Rotation to direct occiput posterior is particularly apt to occur in event of poor flexion or in the presence of a small fetus or in a funnel pelvis.

Posterior rotation does not necessarily mean that spontaneous delivery will not take place. The nose or the bregma may impinge on the symphysis. The occiput is then delivered partially by exaggerated flexion and the remainder of the head by extension.

In past generations the attitude has been adopted that occiput-posteriors always result in serious dystocia. From the percentage of vertex presentations which are posteriors it is readily seen that this is not true. The idea has given rise to many manipulative methods of treatment. However, the natural forces usually rotate the head.

Since the process is slower, there is special indication for analgesia to conserve the mother's strength.

If spontaneous delivery does not take place after about two hours of second stage labor or if there is evidence of maternal or fetal distress, interference is indicated.

In these cases the head will usually be found rotated to an occiput transverse position. The condition then becomes a deep transverse arrest which is one of the im-

possible spontaneous deliveries. This is most apt to occur in a pelvis of the flat type.

If the head is high and persists as a posterior with the indications for interference fulfilled, podalic version and extraction under moderately deep anesthesia is the preferred method of delivery. Ether or chloroform anesthesia are the ones of choice because they give the maximum relaxation.

If the head is low and persists as a posterior or as a deep transverse arrest with the indications fulfilled the management is different.

METHOD OF ROTATION

First, manual rotation of the head to an occiput anterior is attempted. The head is grasped between the thumb in front and the fingers behind and the head rotated in the proper direction. At the same time the other hand attempts to rotate the body of the fetus through the abdominal wall. This will be met with varying degrees of success as you all know, depending somewhat upon the size of the operator's hand. If the operator's hand is small he will be able to open it more fully. Personally, I find that in the above procedure if the tip of the index finger makes pressure in the proper direction on the sagittal suture that rotation is more easily accomplished. After rotation is completed the head is held in position by the vaginal hand, pressure is made over the fundus by an assistant and forceps are applied.

If the head is too firmly fixed for manual rotation, Scanzoni's maneuver after Bill's modification is the method of choice with one exception. If the head is quite low and well molded and almost a direct O.P. it is safer to deliver it as such with forceps. There is then less danger of inflicting intracranial injury than by suddenly altering the molding with Scanzoni's maneuver. Traction is first made in a horizontal direction until the forehead or nose impinges under the symphysis. The head is then flexed and the occiput is delivered over the perineum.

In applying forceps to a deep transverse arrest there may be much difficulty. The anterior parietal usually presents well down its side throwing the sagittal suture posteriorly. The depression of the handles of the forceps towards the floor together with the passage of the posterior blade between the head and promontory of the sacrum may be traumatizing with the ordinary forceps. Kellend forceps which have a sliding lock and adapt themselves as the head rotates are extremely satisfactory.

Face presentations occur in about 0.5 per cent of all labors. Like all other presentations they usually occur in the right oblique diameter with the chin anterior.

The cephalic prominence is felt on the same side as the back and is exaggerated. If the position is mento-anterior the back and prominence will not be palpable but the small parts will be unduly prominent. The diagnosis is verified by vaginal examination when the cervix is sufficiently dilated. When there is much edema of the face, the mouth may be occasionally mistaken for the anus, but the absence of meconium will clear the diagnosis.

The mechanism of labor here involves the cardinal movements of descent, internal rotation and flexion with the accessory movements of extension and external rotation. The chin impinges on the symphysis and the head is born by flexion.

THORN'S MANEUVER

If the chin lies posterior we now encounter another one of the impossible spontaneous deliveries. If it fails to rotate anteriorly, Thorn's maneuver, which consists of passing the hand over the occiput and pulling it downward, may be attempted. This converts to R.M.P. to L.O.A. The posterior chin presentation may be rotated to an anterior at times. If these procedures are not possible, low cesarean section, especially of the Latska type, is the method of choice.

Brow presentations which persist probably occur only once in 2,000 labors. The general line of treatment is the same as that for face presentations.

Breech presentations occur in about 1.6 per cent of full term labors and about 3.3 per

cent of full term and premature labors. The diagnosis is usually effected without difficulty. The head is palpated in the fundus, the fetal heart is high, there is no suprapubic cephalic prominence, and vaginal examination with some dilatation of the cervix will confirm the diagnosis.

The mechanism is practically the same in all cases. The sacrum usually descends in the left oblique diameter.

Because the fetal mortality is so high, 10 per cent in breech deliveries, external cephalic version should be attempted. Holmes is able to convert 90 per cent of such presentations by this procedure.

The labor is long and painful so here again analgesia is of great importance. The fetus should be allowed to deliver spontaneously to the level of the umbilicus. The pelvis is then grasped and traction is made downward toward the floor with the infant directly on its side. Traction is made until the axilla on the anterior side is in view. The arms are then delivered by flexion and adduction and rotation. The head may be delivered by Mauriceau's maneuver or by forceps applied to the after coming head.

TRUE TRANSVERSE PRESENTATIONS

True transverse presentations rarely occur. The position is usually an oblique transverse with the shoulder presenting.

The diagnosis is usually suspected upon inspection of the mother's abdomen. The longitudinal fetal ovoid is replaced by a transverse football shaped protuberance. Abdominal palpation will show the head over one pelvic brim and the buttocks in the opposite iliac fossa. Vaginal examination will reveal the gridiron of ribs or a shoulder at the internal os.

It is obvious that before labor begins external cephalic version should be attempted. If this is not successful, the membranes intact and cesarean section not indicated, a bag is inserted into the vagina until the cervix is fully dilated. If the membranes are ruptured the bag is placed in the uterus. This prevents prolapse of a small part or of the cord, and with the completion of the first stage of labor version and extraction can easily be carried out.

If the case comes to the physician's attention with impaction of the shoulder, in the so-called neglected transverse, several things are possible. The case may be observed for a while, if the fetus is small, for the occurrence of spontaneous evolution of Douglas or for the mechanism of Roederer. If version is impossible low cervical or Porro section is the last resort in living babies.

Compound presentations such as an arm and head or an arm and leg offer individual problems. The patient is usually placed on the side opposite the extra part and an attempt is made to replace it.

Version is usually the procedure resorted to for correction of the abnormality.

Just one word about multiple pregnancies because here again is encountered one of the impossible spontaneous deliveries; namely, locked twins. The usual procedure is carried out under deep anesthesia and consists in pushing the first twin into the uterus as far as possible, freeing the heads and have the second head held out of the way by an assistant while the first twin is being delivered.

If this is impossible, the first twin is decapitated and the head pushed into the uterus. The second is then delivered by forceps and the first head removed later.

Staphylococcus Aureus Meningitis

Sulfathiazole, the latest addition to the sulfanilamide family, proved effective in bringing about the recovery of a child suffering from staphylococcus aureus (a yellow pus-producing bacterium) meningitis (inflammation of the membranes surrounding the spinal cord and brain), Frederick W. Dietel, M.D., Churchville, N. Y., and Albert D. Kaiser, M.D., Rochester, N. Y., report in *The Journal of the American Medical Association* for August 24.

Staphylococcus aureus as a causative agent of meningitis is comparatively unusual in children, but when it does occur the mortality rate is high. In the case reported by the two physicians the drug was administered by mouth daily for a period of nine days.

COMMON SENSE IN PUBLIC HEALTH ADMINISTRATION

By HARRY A. SMITH, M. D.*
Wheeling, West Virginia

PUBLIC HEALTH is yet in the process of definition and clarification. The field has grown inconceivably since the first health departments were established years ago. From part time doctors who had no professional staff, they have now become specialized organizations that reach into every phase of community life. Even the thinly populated counties are combined with others and provided with trained health supervising personnel.

Public health must have a program and its chief consideration will be here briefly discussed. Fundamental in any program is common sense. Of course there must be a community concept of what its health should be, but administrative procedure should always be built upon, and guided by, elementary common sense. We achieve health ideals and standards more satisfactorily through education than we do by compulsion. The citizenry can be taught to respond. A majority of the citizens are anxious to have community health at the highest possible standard.

View the community as a whole. Component parts may require special attention, but prejudicial administrative action must be meticulously avoided. Petty items should never become major ones. If neglected, any question, howsoever small, can assume major proportions; but this simply impresses the fact that early evaluation is supremely important.

Who can help the health officer in the complexity of his duties? The answer is, the county medical society. To it should go all vital, debatable issues for consideration and settlement.

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The president will gladly appoint a capable committee to meet with the health officer regularly and as often as necessary. The chairman of such a committee can be of invaluable service in the interim between meetings. It is truly inspiring to see how willing a group of busy, hard-pressed doctors really are to supervise the community health program. Of course, the health officer should attend society meetings faithfully. The dividends accruing to the community from the energetic cooperation of the medical society cannot be denominated in words.

Nowhere is this more evident than in the field of communicable diseases. Careful quarantine regulations are required, we all admit; but they are infinitely more effective when all the physicians are lending their professional and personal influence. Changes are presenting themselves constantly. We really do not know what the length of quarantine in various communicable diseases should be. For example, how about whooping cough and scarlet fever? And the quarantine on measles avails us very little, because the period of real contagion cannot be controlled by this measure. The best authorities are not in agreement on a comprehensive outline of quarantine restrictions.

Who must decide, finally, what is proper? The practicing physicians, naturally. They are in constant contact with disease in the field and they alone can tell what ought to be done. Sentiment crystallizes as conditions dictate. No state or national authorities can

ignore the opinion and experience of the man in the field, the practicing physician. If a change in any quarantine is indicated, it should certainly be considered by those who prescribe the conditions.

Turning now to his immediate personnel, the health officer must have cordial and healthful relations with his staff. Cooperation shall be their creed. Public sanction enables health departments to function. Any health office contains those who forget they are public servants, and with these the administrator has his chief difficulties. Emphatically, he must impress the community concept of combined action and effort. This does not imply weakness in health administration; never can it imply subservience to political expediency, nor individual submission to favoritism.

MILK SUPPLY

Let us consider a basic food item—milk. Every community is entitled to a safe and ample milk supply. In administering such a program, the problems are both multitudinous and mountainous! Many producers produce milk, but not all are willing to comply. This is a matter of persistent educating and training. No producer or milk plant shall say that law begins or ends at any particular place. There are certain minimum standards that cannot and shall not be violated. On the other hand, no one is able to meet impossible requirements, nor can we expect to achieve superb cleanliness and sweet idealism overnight. To say "you must" to the farmer who produces milk may not be as effective as to say "you can." The pendulum swings extravagantly in the direction of major and minute requirements; yet there cannot be inexcusable laxity with the one who knows no standards except those which fit his own purse.

This fact stands out: We cannot crush the milk producer under a massive avalanche of superimposed conditions. Yet, alertness is a prime virtue in keeping that same producer in a state of watchful cooperation, lest he put milk on the market that no one would care to consume.

And watchfulness is just as imperative in the inspection of public and private water supply. Even though chemically treated water is available, there are many people who use a well or spring without ever a thought of laboratory analysis. When a spring has to be closed because of undeterminable contamination, there is usually violent community protest. It is the duty of the health department to educate the citizens in such a way as to support measures that are necessary for the public good.

Records of milk and water need to be carefully kept and filed; they are as important as vital statistics. Therefore, we beg permission to discuss records briefly. Of course they are necessary, but how often do records become ponderous and almost useless. Records need to lend themselves to easy, decent compilation, and quick accurate accessibility. More than one capable worker is so swamped with record keeping that his or her most vital usefulness is sharply impaired. Health office records should set forth and preserve in orderly fashion the essential facts without duplication.

BUSINESS INTERESTS

Nor should we like to go to a phase of public health administration that is erroneously estimated. I refer to the business interests. It is true we help to regulate business health conditions, but we must ever remember to help and not to hinder. Restaurants and other food handling establishments frequently need careful scrutiny and close supervision, but it is always a matter of education. A stern hand must sometimes reach out from the health department, but not often. Most proprietors will learn cleanly habits. A warning first is always advisable, with a conference in the health office. Remember that business is already hampered with countless troubles and can ill afford to carry extra worries. A soft, easy policy? No, never. But such a policy as builds from month to month cleaner restaurants and eating places.

There is much adverse criticism of food handlers' examination in the belief that they are not sufficiently frequent. This may be true, but they still exert a wholesome influence which conduces to cleaner hands and bodies. A re-examination can be called for at any time. Let us examine all food handlers thoroughly at least once a year. The public likes it and feels better. Doctors in general are unwilling to cast it aside.

But any health unit must not be excessive in cost. Fundamental health supervision shall be maintained with reasonable equipment and properly paid personnel, but the public reacts unfavorably to apparent extravagance. We must always be prepared to defend our policy and to show how the tax money has been spent. Democracy demands this; dictatorship enforces mute silence.

Finally we need to give prompt, courteous attention to all requests and complaints. Proper evaluation is one of the prerequisites of any health administrator. Do not waste time on trifles. Be sure to serve the community equally, sympathetically yet forcefully, promptly, without prejudice, fearlessly, cooperatively.

VENEREAL DISEASE

And there can be no better conclusion to an article on public health than a brief summary of the work done to control and treat venereal disease. This occupies a large place in the public health program everywhere. For those not dealing directly with syphilis and gonorrhea, the figures which every community presents would be astounding. These diseases must be dealt with in a manner which is both aggressive and progressive, because society cannot go unprotected. Curing the individual is no more important than education of the public. Sex relationship has always been a vital force that will not be denied and cannot be extensively suppressed. A long discussion on the social and moral considerations involved in promiscuous and illicit sex practices is out of order here, but the treatment of the direct and frequent by-products of such practices has become increasingly the obligation of public health departments. Those who can pay for treatments are not really the social menace to which we so often refer; it is the indigent who would otherwise go untreated. And this all inflicts a heavy burden in time required and money expended, but no one now questions the advisability of public health venereal clinics and the absolute necessity for their efficient and uninterrupted operation.

Yet, the public health departments must not practice medicine. Great care and tact are frequently required to prevent certain persons, who can and should pay a private physician, from attending the free clinic. Frequent surveys of clinic patients should be made to control the item to which reference is here made. Likewise, doctors should be free to refer patients to the clinic at any time; it is a public health institution in which social regeneration should have the opportunity to be done at all times.

The whole program is humanitarian; it must be. We in health work deal with all types of human beings. Especially is our field in the lower strata of society, and we need to believe in folks. No job is too difficult or too lowly. Those whom success and fortune have favored want a good public health program, because it makes life and home better and brighter.

Inhaling Stomach Contents

One of the most frequent causes of lung complications following operation or in persons in whom the normal protective reflexes of the windpipe and bronchi are impaired is due to the breathing into the lung of regurgitated stomach contents, Ernest E. Irons, M.D., and Carl Wesley Apfelbach, M.D., Chicago, point out in *The Journal of the American Medical Association* for August 24.

A history of hiccupping, retching and nausea, the authors say, is elicited more frequently than vomiting in these pneumonias. This, they explain, may be due to the fact that patients able to vomit vigorously are more often in possession of active reflexes and are better able to expel such foreign material as enters the windpipe.

PRESIDENT'S ANNUAL ADDRESS*

By HUGH H. TROUT, M. D.
Roanoke, Virginia

IT is, of course, my pleasant duty first of all to thank the members of the Medical Society of Virginia for the honor they have conferred on me in having elected me president of our society. It is a real joy for me to tell you of my very deep appreciation of this misplaced confidence in me. This term "misplaced confidence" is employed advisedly, for I realize, far better than anyone else, how many more mistakes I would have made than I have made had I not had the able guidance of our secretary, Miss Agnes V. Edwards, as well as the assistance from the Council and the House of Delegates.

An honest confession, I am told, is usually helpful. In other words, I am frank to state that up to several years ago I had not taken the interest in our society that I should have. Due to my contacts during the past two years with the various members and officers of our society I have reached the conclusion that an intelligent interest in one's state society is the most broadening and valuable experience any one can have. Therefore the advice I am giving the younger members of our profession is to take a more active part in the affairs of our state society. Such activity will probably be of some aid to the society, and it will certainly be of great benefit to the individual member.

Meeting jointly this year with one of the "offsprings" of the "Old Dominion" very naturally brings up some questions in genealogy. First: is this "offspring" a daughter or a son? Perhaps we should not expect our doctor friends of West Virginia to answer this. Personally, I have always had an indefinite idea that West Virginia was some kind of a daughter of Virginia. Just like one is apt to think of all angels as being females. When this Virginia "offspring" invited us to join her in the annual meeting, I noticed from the letterhead that the Medical Society of West Virginia was organized in April, 1867. Then I noticed from our own letterhead that the Medical Society of Virginia was organized in 1870. Naturally this presented to my mind a problem involving illegitimacy. While I have known a lot of illegitimate children, I do not recall a case or even a record of a case where the child came into this world three years before the mother was born. In order that no one else might further question the legitimacy of the Medical Society of West Virginia, the officers of the Virginia Medical Society with the assistance of Dr. Clarence Porter Jones of Newport News, Virginia, some lawyers, a few pseudo historians and several who considered themselves genealogists established the following facts:

First: The Medical Society of Virginia was actually organized in 1821, not 1870.

Second: On January 2, 1824, an Act to incorporate the Medical Society of Virginia passed the General Assembly.

Third: The last meeting prior to the Civil War was held in Richmond in 1858. As far as can be ascertained no further meetings were held until 1870. This is the explanation as to why for so many years many of our members thought that the Medical Society

THE AUTHOR

Dr. Hugh Henry Trout, president of the Medical Society of Virginia, graduated from the University of Virginia Department of Medicine, 1902. Fellow American Board of Surgery, American College of Surgeons, et als.

*Read before the joint meeting of the Medical Society of Virginia and the West Virginia State Medical Association at White Sulphur Springs, W. Va., on July 30, 1940.

of Virginia was organized first in 1870 instead of fifty years before that date.

From this you can see that the Medical Society of Virginia was forty-six years old when the Medical Society of West Virginia was born. We will admit this is a little late for childbirth, but nevertheless we are very proud of our child, especially now that all question of illegitimacy has been removed. If anyone here should even now feel inclined to further question the relationship of the two state medical societies it might be advisable to refer this matter to the bar associations of the respective states. These two bar associations are following the example set them by these two medical societies, and holding a joint meeting right here next week.

MARRIAGE LAWS

Having referred to the birth of the Medical Society of West Virginia naturally brings to the mind the laws regulating the right of our citizens to enter a contract of marriage. I am glad to be able to remind you that starting in about forty-eight hours from this very time, Virginia will follow the example of West Virginia in trying to prevent the propagation of diseased children. In other words, after August 1, 1940, no couple can be married in Virginia without first having had a blood test for syphilis. If the test of either one of the contemplating contracting parties should disclose syphilis, they may still be married in Virginia, but only after both parties possess the knowledge of the presence of syphilis and promise to take proper treatment for a sufficient length of time. I personally regret that the Virginia law in this respect gives such an option. However, I am sure this law even as it will soon start in Virginia will be of great benefit to the future citizens of our state. Our society has been intelligently active in the framing and passing of this law. As a result of our activity and investigation there have been some abusive letters received by your president during the past few months. When these letters have been received from a member of the ministry (and there have been surprisingly few of such) I have made it a rule to ascertain from the clerk of the court of the locality in which the clergyman lived, the number of marriages that particular minister performed yearly for the past few years. The information obtained from the clerks of the courts has, without a single exception, shown a tremendous increase in the number of marriages performed in Virginia. This increase is due to the result of the enforcement of this law in the neighboring states. This information has been sent to the complaining minister with the request that if such is not correct to let us hear further from him. In no case has there been any further correspondence.

During the past few months it has been my agreeable task to review the annual addresses of many of my predecessors. Such a study has convinced me that to refer to the past would be but a repetition of what they have already said and expressed in far more gracious language than I possess. Therefore, I feel it is imperative that the few remarks I might make should be confined to situations right at hand. There is no emergency that could possibly exist that is more urgent to the medical profession of America than the situations created by the recent developments on the European continent.

EUROPEAN SITUATION

If we want to retain our liberty, our right to express our honest views, even our desire to see the continuation of medical progress, which has been so marked in our country, then we as a profession will have to organize to prevent the permeation of such views as now exists in Europe from penetrating throughout America, and, it is not improbable that some of us here will be called on to give our lives to save those views which we as Americans have cherished and loved for so many years.

There is, of course, much confusion in this country right now as to the proper course for us to pursue. A few somewhat amusing situations have been created, none perhaps more interesting than the one that occurred recent-

ly in New York during the meeting of the American Medical Association. There, the Federal Government asked the American Medical Association to organize its members so that they would be quickly available for the defense of this country. Some of the officers of the American Medical Association had to leave the convention early in order to appear in Washington to be tried by the same Federal Government for being members of a so-called "Medical Trust."

As you know, this request from the Federal Government met with a wholehearted response from the American Medical Association. The Committee on Medical Preparedness with one of our invited and honored guests, Dr. Irvin Abell, as chairman, was quickly formed, and, of course, the Medical Society of Virginia is very anxious to do her part and lend every possible assistance to this national committee.

I am certain also that the component societies of our state society are anxious to do their part in any program established by this Committee on Medical Preparedness. In fact, I feel quite sure the vast majority of our membership has already answered the seventy-eight questions contained in the questionnaire sent out by this committee.

FINANCIAL LOSS

Following the last World War many doctors returned to their homes after military experience to find that some of their contemporaries who had remained at home during their absence had accumulated considerable money and some of their practices. Most of these men who remained at home had done so through no choice of their own, but I regret to state that some of them had evaded service to their country by means of legal and other technicalities. The Medical Society of Virginia through its House of Delegates is trying to find some plan to equalize this financial loss by some and gain by others. I doubt if any very workable plan can be formed, but certainly a frank discussion of this subject might lessen the number of abuses that occurred during the last war.

In event of the continuation of the present national emergency none of us knows what will be the future of our profession. Unless we solve our own problems in the manner which we know from actual practice to be best, then the chances are the Federal Government, regardless of who is elected president, is going to impose on us some regulations which based on theory will not be practical in America. I think most of us feel that following this war there will be introduced into America some type of so-called "socialized medicine" but very few of us agree as to what we mean when we use this term. Surely we all look with many an apprehension at the various plans advocated by the theorists who do not have the background of personal practical experience.

LEGAL COUNCILLOR

The creation of the position of legal councillor for the Medical Society of Virginia is one that is urgently needed and I hope the House of Delegates will arrange for same at this meeting.

We have all also watched with some degree of apprehension the manner the so-called "fifth column" of the Nazi government has preceded the actual military invasion of those countries which Germany has conquered. It is important to realize that the activities of this so-called "fifth column" have extended within the ranks of our profession in those invaded nations. It might be wise to watch for such activities within our own ranks in this country. I am sure many of us have regarded certain of the recent trends in medical practice as possibly having obtained their origin and their inspiration from what most of us regard as unhealthy European conditions. If any of us entertain the views that the introduction of such practices in America would help the progress of our profession the cure of such a mental attitude can be found in a visit to any one of those countries, and a study of the plight of the patient and doctor there.

During the past year, our society has been able to assist in finally combining the efforts

in the fight against cancer into one agency. You will recall that previously there were five agencies working somewhat at odds. Now that all such activities are combined under the able leadership of our chairman of the Cancer Committee of the Medical Society of Virginia, Dr. E. P. Lehman, I feel confident that the efforts being made to control cancer in Virginia will progress more smoothly and effectively than previously. As a large part of this progress depends on the education of both the profession and the laity every member of our society has a definite obligation to disseminate correct information concerning cancer.

POSTGRADUATE EDUCATION

The postgraduate educational program is progressing in accordance with the foundations so well established a number of years ago by the officers of our society during the presidency of Dr. J. W. Preston. I am sure we can depend on both of our state medical schools to continue this vitally necessary work.

It has been suggested that continued membership in the Medical Society of Virginia be not only dependent on the payment of dues, but also on certain yearly attendance upon medical meetings and postgraduate courses. Many of us feel membership in any organization is more appreciated if some individual effort is made a prerequisite for the continuation of such an association. However, it is quite questionable if compulsory intellectual effort in adults is ever justified or successful.

For a number of years the care of the mentally sick in the State of Virginia has not been what it should have been. The creation of the State Hospital Board with Dr. Hugh C. Henry as director has proven a wonderful step forward and we have a right to expect, and we feel confident under his guidance the treatment of these patients will now improve from year to year. Before much improvement can be made, however, the influence of politics will have to be eliminated and whether such can be accomplished in a democracy is at least a debatable question. I am certain Dr. Henry and his co-workers will appreciate any member of this society reporting to him any abuses of which he might have knowledge or suggestions which he might consider to be helpful.

Virginia has a right to be proud of her record as regards the care of her citizens who have developed tuberculosis. Even in this field there are still many problems to be solved. I am sure we all feel every confidence in Dr. I. C. Riggin and the department of health. For some reason or reasons this department of the state government apparently has not been encumbered by the restraining influence of politics. Perhaps I might even suggest that they are "master politicians." In fact, I do make that as an assertion provided you are willing to accept my definition of a "master politician", namely, one who does his job so effectively that even the politicians cannot successfully attack his methods or his results. Here too, we as individuals, can be of assistance. I doubt if very many of us realize that while the Health Department of the State of Virginia is held responsible for the health condition of the entire state, they are not given any voice in the selection of the various city health officers. Of course, the city fathers of each city feel if they are going to pay a man his salary they should have the right to select that man. There is much justice to this state of affairs, but there certainly should not be any objection to the requirement that a city health officer should be selected only from a list of qualified applicants submitted by the state department of health. We as individual members can and should inform our members of the House and the Senate of this situation and ask for their aid in correcting this matter.

THE NEGRO DOCTOR

It is my very deliberate and considered opinion that the Medical Society of Virginia should take some definite steps to aid the Negro doctor in our state. I do not feel they even desire social equality which some of our

members might think they do, but I do know they want the right to hear scientific papers, to use our libraries, to have the protection of membership in the American Medical Association, and to be given a chance to have some of the many professional advantages we of our race now enjoy. They are asking for and they need our help, and it would help each one of us were we to show our appreciation of the good work they have done, by arranging to give them now the assistance they have so well merited.

BIRTH CONTROL

Even to mention the question of birth control usually brings forth a flood of oratory. However, I will refrain from any attempts at such, but, in order to make this annual report to you somewhat complete, will state I am convinced after a study in other states, that this is a subject which should not be, at the present at least, made a responsibility of the state department of health.

The chiropractors, naturopaths, etc., are still in existence, and I presume some such cults whose main objective is the extraction of money from the sick will continue always to be just another problem for our profession to watch and see that they do not endanger too greatly the health of our citizens. Perhaps these parasites are not vicious or malicious, but they are certainly ignorant and therefore dangerous to the health of any community. Attempts will continue to be made to legalize such "cults" each time the General Assembly meets.

No compromise with a vice or an evil has ever been a wise legal or moral procedure. For this reason, I know we can trust the members of both the Legislature and the Senate not to place this additional burden on the department of health in their efforts to prevent epidemics, to control cancer and to preserve the health and welfare of our commonwealth.

In the annual report from Mrs. H. A. Latane, president of the Woman's Auxiliary to the Medical Society of Virginia, she made the statement that her organization has continued to make "a better fellowship between physicians and physicians' wives." May success continue to crown their efforts, and may we doctors make a better effort to be better husbands to the best wives on the earth.

The graduate nurses also have their troubles, chief among which is the lack of proper nursing in rural communities. The Medical Society of Virginia is ready and anxious to help, but is unable to do so until the time comes when the Nurses' Examining Board presents some definite plan for the correction of this defect in their educational program. We have been assured by this board that they are now making a survey of this situation both in Virginia and in other states and will have some concrete suggestions before the meeting of the next General Assembly.

STATE VETERINARY DEPARTMENT

Virginia has the right and is proud of the record which has been made by Dr. H. C. Givens and the State Veterinary Department in the control of tuberculosis and undulant fever in the milch cattle of the state. Our profession would be very derelict in its duty if we failed to acknowledge our gratitude to these co-workers of ours for the control of tuberculosis in cattle, and thereby accomplishing almost the entire elimination of tuberculosis of the hip and other bones, as well as disappearance of the old tubercular glands of the neck in our children, which we surgeons remember with so much sorrow.

The Veterinary Department of the State of Virginia has led the entire United States in the program for the elimination of Bang's disease in cattle, and I believe we as medical men will soon be able to thank them for the disappearance of undulant fever in humans.

In an address of this nature, one necessarily has to deal largely in generalities. However, tonight I want with all the force I can command to deal specifically with one generality. That generality concerns the dangers of an easy going neutrality to the vital affairs of life. By this I do not intend to refer to advisability of the United States

government either taking sides for or against the English or the German nations, though frankly I personally find it difficult, if not impossible, to wean myself from the side of the people who speak and think as I do. There is only one certain ending to this war, and that is that the standards of living in America are going to be lowered no matter how this war may terminate. With this lowering of our standards, we, as a profession, must recognize the dangers of not being neutral to any change which might mean an invasion or curtailment of medical progress in this country.

This is neither the time nor the place for any discussion of the details as to how such a catastrophe can and should be prevented. However, there is one very definite theory to which every one of us should subscribe and that is in a belief that there is and must be some power higher than man, state, government or group of nations. Without such a firm foundation all theories of government or types of practice of medicine must and will fail. Civilization looks to us as members of a learned and honored profession to help preserve such a theory, and this is a subject on which we cannot and should not be neutral.

TREATMENT OF INFECTIOUS DIARRHEA WITH SULFAPYRIDINE

(Case Reports)*

By A. J. VILLANI, M. D.
Welch, West Virginia

EVERY physician dreads diarrhea in infancy and childhood during the summer months. The incidence and death rate are seemingly in proportion to the increase in temperature during this time. The great majority of serious cases are seen in the first two years of life, and although diarrhea is of frequent occurrence in childhood, its consequences are less severe. The condition is more frequently seen in the hot summer months, especially in July and August. Poverty, poor hygenic conditions, crowding and uncleanliness, are all predisposing factors. In many instances, it is due to contaminated milk, therefore, the incidence is four times more frequent in artificially fed than in breast fed infants.

Diarrhea is often an important or a secondary symptom of other diseases, especially the acute infections. To evaluate the factors involved and to distinguish between diarrhea due to functional disorder and that associated with organic involvement, is often difficult. The part played by bacteria is also uncertain. Diarrhea may be due to a number of causes.

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Diarrhea may be due to mechanical irritation because of the presence of undigested or indigestible food in the bowel. Diarrhea may be due to toxic causes, the influence of the toxins produced endogenously by bacteria or their action upon the intestinal contents. Diarrhea may be due to nervous disorders as often encountered in cases due to chilling of the body, emotional excitement, and fatigue. We are all familiar with the diarrhea associated with metabolic changes that take place within the body with the efforts of the system to eliminate various endogenous poisons and toxins, as those produced in uremia, acidosis, etc. Last of all, but not least, is the infectious type of diarrhea. This differs clinically from the other conditions described in that it is more severe, and is nearly always associated with the presence of blood, pus, and mucus in

*Read before the meeting of the staff of the Bluefield Sanitarium, May, 1940.

the stools. The dividing line between severe intestinal indigestion and infectious diarrhea cannot however be clearly defined. The symptoms aside from the presence of blood in the stools are very similar to, if not identical, with those of intestinal indigestion.

Barenberg, Levy, and Grand[1] state that the term "infectious diarrhea" is used to designate a syndrome characterized by sudden onset of diarrhea, slight fever, dehydration, complications of the ear and respiratory tract and a high mortality. It is a distinct entity and must not be confused with dysentery, summer diarrhea, or gastro or enterocolitis. No specific organism in their reported cases has been isolated to account for the syndrome. The mortality was as high as 43 per cent and deaths were due apparently to an extensive bronchopneumonia. The postmortem examinations did not indicate a primary intestinal infection. The findings of pneumonia with mononuclear infiltration in the absence of any intestinal lesions suggested the possibility of a virus infection.

INFANTS MARKEDLY DEHYDRATED

Several summers ago, I encountered severe cases of infectious diarrhea in which there were extreme high temperature and vomiting, the diarrhea being characterized by watery green stools tinged with blood and mucus. The infants were markedly dehydrated and despite the prompt restoration of fluids and electrolytes, they developed signs of bronchopneumonia, extreme cyanosis, pallor, and marked respiratory embarrassment with a terminal pulmonary edema. It was with this in mind as well as the remarkable results obtained in the treatment of pneumonia with sulfapyridine, that led me to consider using the drug in cases of infectious diarrhea.

Recently, Jones and Abse[2] gave sulfanilamide to twenty-one patients suffering from dysentery caused by the bacillus of Flexner. Within 24 to 48 hours of the first dose of the drug the temperature fell to normal. Shortly after this the passage of stools containing blood and mucus ceased, to be followed by the passage of formed stools from which the bacillus of Flexner could not be isolated.

Kiter[3] believes sulfanilamide to be a specific therapeutic agent in the treatment of bacillary dysentery in infants if used in conjunction with adequate fluid administration, starvation, and vitamin restoration.

TREATMENT

For the past several years, the treatment of infectious diarrhea had been based on the concept that the disease is self limited, that if one maintained the fluid requirement and water balance and restored the blood corpuscles and serum protein by small blood transfusions, the majority of these infants would recover after a period of treatment extending over a number of weeks. Dehydration usually occurs because of the vomiting and restoration of the fluid loss in the stools by maintenance of the water balance is essential. Many men consider the starvation period an important part of the treatment because of the vomiting and diarrhea. Different solutions have been recommended for the treatment of the dehydration. I feel that the starvation period is not an essential part of the treatment as considered by some authors. I feel that the sooner one is able to control the vomiting and administer fluid by mouth, the sooner the sulfapyridine can be administered. To maintain the water balance, these patients are given normal saline by hypodermoclysis and intraperitoneally. Frequently, we add an ampule of calcium levulinate or calcium gluconate to the normal saline. The vomiting is treated by the use of elixir of phenobarbital with sips of orange juice and normal saline and as soon as the vomiting ceases, patients are put on boiled skim milk, sulfapyridine and small amounts of kaomin and paregoric. We have found that by the use of normal saline by hypodermoclysis and sips of orange juice and normal saline by mouth we have been able to control the vomiting which as a rule is caused by the acidosis and dehydration. Patients are also given normal saline enemas for abdominal distention and starch enemas for tenes-

mus. As soon as these patients are able to take the orange juice, saline, and medications, we start the infants on a lactic acid milk formula. Children with infectious diarrhea respond rather promptly to this form of therapy and as soon as the vomiting ceases, these children are given cereals, bread, custards, and very ripe bananas in addition to their sulfapyridine medication.

BANANAS ADDED TO DIET

Many of you are probably wondering why we add the banana to the diet. As you know, science calls the common banana "musa sapientium" which means fruit of the wise men, and according to ancient legend, the sages of India reposed in the shade of the banana palm and refreshed themselves with its luscious fruit. Analysis of the banana, shows that it contains 20 per cent sugars; (4.5 per cent dextrose, 3.5 per cent levulose, 11.9 per cent sucrose), 75.6 per cent moisture, 1.2 per cent starch, .6 per cent crude fiber, 1.3 per cent protein, .6 per cent fat, .8 per cent ash and in addition to this vitamins A 71 units, B five units, and C 57 units per ounce. (Units international). As you see this fruit contains the essential nutritive substances in addition to the vitamins, and we encounter no difficulty in getting children to partake of this form of nourishment.

As to the dose of sulfapyridine administered, I followed the same dosage recommended for pneumonia as follows:

1-3 mos...	2.25 grains	.15 grams	4 hours
6-12 mos..	4.5	.3	4
2 yrs....	4.5	.3	3
5 yrs....	9.0	.6	4
12 yrs....	13.5	.9	4

We are all familiar with the chemotherapeutic action of sulfapyridine in pneumonia. Just what rôle sulfapyridine plays in its action on the gastrointestinal tract is uncertain and can only be explained on the basis that it is a highly alkaline substance. It is absorbed promptly in the gastrointestinal tract although not as rapidly as sulfanilamide. Due to its high alkalinity, the ph of the intestinal tract is possibly changed thereby bringing about a bacteriostatic action on the causative organism. Barenburg and others in their series of infectious diarrheas noted that when the stools became alkaline, the diarrhea checked. In the cases which I am about to present, we have no record as to whether the stools were acid or alkaline prior to or after the administration of sulfapyridine. As stated earlier, sulfapyridine was added as a therapeutic agent hoping to prevent a terminal pneumonia. In doing so, gratifying control of the diarrhea was obtained in less than 48 hours after the beginning of sulfapyridine therapy, stools checking in number, becoming formed with the absence of blood and mucus, and the patients showing definite improvement. I must here emphasize that sulfapyridine is merely a therapeutic agent and that the restoration of body fluid and electrolytes and the control of the vomiting are most essential. The necessity for maintenance of the water balance cannot be overemphasized. Dehydration must be overcome in the dehydrated infants and diuresis is most desirable, for this relieves the toxemia.

Before presenting these case reports, I must confess that much remains unexplained. In a number of these cases we were fortunate in obtaining stool cultures which were reported negative for organisms of the dysentery group. In other cases, no stool cultures were obtained. All of the cases, I feel, warrant presentation in order that discussion may be created considering the further use of this chemotherapeutic agent. In these cases, I have encountered no serious complications, the minimum dose of the drug was administered and the action of the drug was apparently prompt.

CASE REPORTS

Case No. 1: (Case No. 26,717) white child, age 20 months, admitted to the hospital on 6/16/39 with a history of bloody diarrhea of three days duration associated with vomiting. At the time of admission, the child was markedly dehydrated, having eight to ten greenish-yellow watery stools with blood and mucus during the night. Temperature on admission was 101.6 rising to 105 in 24 hours. The child was given fluids by hypodermoclysis,

orange juice and saline by mouth, with elixir of phenobarbital, and as soon as vomiting permitted it was given boiled skim milk, kaomin and paregoric, with saline enemas when necessary for distention. The temperature continued elevated, ranging from normal to 102. There were from five to ten greenish-yellow watery stools with mucus and blood, until 6/24/39, eight days after admission to the hospital, at which time the child was put on one-half tablet sulfapyridine every four hours. The temperature promptly subsided within 24 hours, and the stools became formed and yellow with no evidence of mucus or blood. The child was discharged on 6/26/39, improved. Culture of the feces on admission was reported negative for the dysentery group. Hbg. 64 per cent, WBC 5,350, 47 per cent polys, 49 per cent small monos, four per cent large monos.

Case No 2: (Case No. 26,722) white infant, age two months, admitted to the hospital on 6/17/39 with a history of diarrhea of two days duration. This infant was bottle-fed on an every-day milk formula. Examination was essentially negative except that the infant was markedly dehydrated and vomiting, and having watery green stools. Temperature on admission was 101 rising to 104 and remaining elevated around 102 until 6/19/39 at which time sulfapyridine, grs. one every four hours was started. Temperature promptly dropped by crisis to normal, rising to 102 the following day and on 6/21/39 remained normal at which time sulfapyridine was discontinued. Infant at this time was having yellow formed stools. The child was discharged improved on an evaporated lactic acid milk formula on 6/23/39. Laboratory report on 6/22/39: WBC 7,200, 37 per cent polys, 61 per cent lymph, two per cent cen., hbg. 80 per cent, urine straw colored, negative for albumin and sugar, 1-2 pus cells, 3-4 blood cells per hpf.

Case No. 3: (Case No. 26,879) white infant, age five months, bottle-fed, was admitted to the hospital on 6/29/39 with a history of diarrhea and vomiting of five days duration. Infant at time of admission had a slight cough and a right otitis media necessitating myringotomy. Infant was dehydrated, having liquid yellowish stools with no blood. Temperature on admission was 102.6. As soon as vomiting permitted, child was given boiled skim milk, orange juice and saline, phenobarbital, kaomin and paregoric, and grs. one and one-half sulfapyridine every four hours. Temperature dropped by crisis on 7/2/39 at which time the stools were yellow and soft. Infant was discharged improved on 7/4/39 on a lactic acid milk formula. Laboratory report: WBC 9,400, 25 per cent polys, 75 per cent lymphs.

Case No. 4: (Case No. 26,885) white infant, age five months, bottle fed, was admitted to the hospital on 6/29/39 with a history of diarrhea of four days duration associated with vomiting for the past two days. At the time of admission examination was essentially negative except for dehydration and slight injection of the right ear drum. Temperature on admission was 103. As soon as vomiting was controlled and fluids restored, sulfapyridine, grs. one and one-half every four hours was started and temperature dropped to normal by crisis within 24 hours. Medications and sulfapyridine were discontinued on 7/1/39 at which time infant was having normal stools. Infant was discharged on 7/5/39 improved on a lactic acid milk formula. Laboratory report: WBC 8,400, 43 per cent polys, 57 per cent lymph. Urine was straw colored, acid reaction, one plus albumin, negative for sugar, 1-2 pus cells, many fine granular casts. Culture of the feces revealed b. coli present but no member of the typhoid dysentery group was isolated.

Case No. 5: (Case No. 26,899) white infant, age six months, bottle-fed, was admitted to the hospital on 7/1/39 with a history of diarrhea of eight days duration. Examination on admission was essentially negative except for marked dehydration and temperature of 104. The infant was having liquid yellow stools. Sulfapyridine grs. one and one-half every four hours was ordered and second day following admission temperature was normal and sulfapyridine discontinued. At this time stools were normal in number and consistency. Infant was hospitalized until 7/9/39 at which time it was discharged improved on a lactic acid milk formula. Laboratory report: WBC 27,500, 67 per cent polys, 33 per cent lymphs.

Case No. 6: (Case No. 27,170) white male child, age three, admitted to the hospital on 7/23/39 with a history of bloody diarrhea of eight days duration associated with vomiting. Examination at time

of admission was essentially negative except for dehydration. Temperature on admission was 100, rising to 101 at which time sulfapyridine therapy, one-half tablet every four hours was started. Temperature dropped to normal in 24 hours, stools becoming normal in color and consistency and with no blood. Child was discharged on 7/26/39 improved. Laboratory report: WBC 23,400, 75 per cent polys, 23 per cent lymph, two per cent cen., hbg. 66 per cent. Urine was negative except for two plus albumin and 4-5 pus cells per hpf. Stool culture revealed b. coli, but no member of the typhoid or dysentery group present.

Case No. 7: (Case No. 27,237) white male child, age 13 months, admitted to the hospital on 7/27/39 with a history of diarrhea of three weeks duration with occasional blood and mucus in stools associated with vomiting. Examination was essentially negative except for thrush infection of the mouth and slight dehydration. Temperature at admission was 100.6. Child was give one-half tablet sulfapyridine every four hours, temperature dropping to normal in 24 hours, stools becoming normal. Child was discharged on 7/28/39 improved. Laboratory report: WBC 15,600, 58 per cent polys, 43 per cent lymph, hbg. 59 per cent. Urine was negative except for trace of albumin, and faint trace of acetone, occ. hyaline casts, 1-2 blood cells per hpf. Stool culture reported b. coli present, no member of the typhoid or dysentery group isolated.

Case No. 8: (Case No. 27,261) white male child, age 16 months, admitted to the hospital on 7/30/39 with a history of diarrhea of eight days duration associated with vomiting. Examination at time of admission revealed a dehydrated, acutely ill child, temperature 101, otherwise examination essentially negative. Child was given sulfapyridine one-fourth tablet every four hours, temperature dropping to normal by crisis on 7/31/39. The child was discharged improved on 8/2/39. Laboratory report: WBC 15,050, 60 per cent polys, 40 per cent lymph, hbg. 62 per cent. Stool culture revealed b. coli but no member of typhoid or dysentery group present.

Case No. 9: (Case No. 27,262) white female infant, age six months, admitted to the hospital on 7/30/39 with a history of diarrhea of three days duration associated with vomiting. Mother stated that the infant had been having from 30 to 40 stools per day with some blood and mucus. Examination was essentially negative except for marked dehydration. Temperature on admission was 99.8 rising to 102 shortly after admission. Sulfapyridine therapy was started, one-fourth tablet every four hours, temperature dropping to normal 24 hours following start of sulfapyridine therapy. This was discontinued on 8/2/39 at which time the infant was having normal stools. Infant discharged on 8/4/39 improved.

Case No. 10: (Case No. 27,321) white female infant, age three months, admitted to the hospital on 8/2/39 with a history of diarrhea associated with vomiting of five days duration. Infant had recently been weaned from breast and was on an evaporated milk formula. The stools were described as watery, yellow, but contained no blood. Temperature on admission was 101.8. Examination was essentially negative except for dehydration. As soon as vomiting was controlled, infant was given sulfapyridine, one-fourth tablet every four hours. Temperature dropped to normal in 24 hours following start of sulfapyridine. Infant was discharged improved on 8/6/39. Laboratory work: Hbg. 58 per cent, WBC 13,600, 44 per cent polys, 56 per cent lymph. Stool culture revealed b. coli present but no member of the typhoid or dysentery group present.

Case No. 11: (Case No. 28,298) white female child, age two years, admitted to the hospital on 10/3/39 with a history of diarrhea and vomiting of four days duration. Mother stated that the stools had been streaked with blood, child having from 15 to 20 stools a day. Examination revealed an acutely ill, dehydrated female child, eyes sunken, otherwise examination was essentially negative except for throat being moderately injected and tonsils hypertrophied and cryptic. Temperature on admission was 103. Child was given 450 c.c. of normal saline by hypodermoclysis with an ampule of calcium levulinate and as soon as vomiting was controlled, was given one-fourth tablet sulfapyridine every four hours. Temperature dropped by crisis in 24 hours, and child was discharged on 10/5/39 improved. Laboratory work: WBC 7,000, 37 per cent polys, 63 per cent lymph.

Case No. 12: (Case No. 28,372) white female infant, age three months, admitted to the hospital

on 10/9/39 with a history of having green, watery diarrheal stools, without blood, of one weeks duration, associated with vomiting. Infant had been on the breast until a week prior at which time mother stated that breasts dried up and it was necessary to put infant on a whole milk formula. Examination was essentially negative except for dehydration. Temperature on admission was 104.4. X-ray of the chest on 10/10/39 revealed no evidence of gross disease. Infant was given 100 c.c. of normal saline intraperitoneal and 50 c.c. by clysis and as soon as vomiting permitted was given one gr. sulfapyridine every four hours. Infant ran an elevated temperature from 104 dropping by crisis to 101 on 10/11/39, rising again to 105.6 and finally dropping by crisis from 104.6 to 100 on 10/13/39. At this time the infant appeared to be much improved and because of the vomiting of the drug, it was discontinued. In the course of 24 hours, the temperature again rose to 102 and remained elevated at 102 until 10/17/39 at which time it rose to 104.6 and ran an up-and-down course from 102 to 104.8 and the infant expired on 10/20/39. Laboratory work on admission: WBC 21,800, 54 per cent polys, 46 per cent lymph, hbg. 58 per cent. Catheterized urine speciman on 10/18/39 was essentially negative except for two plus albumin, many hyaline casts, 8-10 pus cells and 2-3 blood cells per hpf. On 10/19/39, WBC 16,200, 62 per cent polys, 38 per cent lymph. Stool culture on 10/13/39 reported b. coli, but no member of the typhoid or dysentery group present.

Case No. 13: (Case No. 29,727) white female child, age 14 months, admitted to the hospital on 2/12/40 with a history of diarrhea of three days duration associated with vomiting. Examination revealed a well developed, well nourished child, face flushed, temperature 101, slight nasal discharge, postnasal discharge, tonsils definitely injected, otherwise examination essentially negative. Child was given one-half tablet sulfapyridine every four hours, the temperature dropped to normal in 24 hours and child was discharged on 2/14/40 improved. Laboratory work: Hbg. 63 per cent, WBC 8,700, 54 per cent polys, 46 per cent lymph. Urine negative except for trace of acetone.

Case No. 14: (Case No. 29,784) colored male child, age 14 months, admitted to the hospital on 2/17/40 with a history of bloody diarrhea of three days duration associated with vomiting. Examination at time of admission was essentially negative except for moderate dehydration and temperature of 102. Child was treated symptomatically, ran an irregular temperature from as high as 102 to normal. On 2/21/40 child was given one-fourth tablet sulfapyridine every four hours. The following day it was noted that the child had an injected left ear drum and a myringotomy was done. Temperature dropped to normal on 2/23/40 and child was discharged on 2/25/40 improved. Laboratory work, 2/21/40: Hbg. 68 per cent, WBC 10,000, 24 per cent polys, 76 per cent lymph. Urine negative except for trace of albumin, 1-2 pus cells per hpf. Examination of stools reported negative for ova and intestinal parasites.

Case No. 15: (Case No. 29,899) white female infant, age nine months, admitted to the hospital on 2/26/40 with a history of having frequent stools tinged with blood and mucus for the past several days. Infant was on an evaporated milk formula. No history of vomiting. Examination revealed an underdeveloped, poorly nourished white female infant, appearing to be about 3-4 months old, irritable, with temperature 102.6. Occasional crackling râles heard over the right base. There was a furuncle just below the scapula on the right with evidence of healed areas of old impetigo lesions on the lower part of the back. Both ear drums were slightly injected. The following day a bilateral myringotomy was done. Commencing shortly after admission, infant was given one-fourth tablet sulfapyridine every four hours. Temperature dropped to normal 24 hours after admission, rose again to 102 but dropped to normal on 2/29/40 at which time sulfapyridine was discontinued. Infant had an uncomplicated convalescence and was discharged improved on 3/4/40. Laboratory work: Hbg. 86 per cent, WBC 15,600, 55 per cent polys, 45 per cent lymph.

Case No. 16: (Case No. 30,623) colored male infant, age seven months, admitted to the hospital on 4/30/40, mother stating that the infant had a "bloody dysentery" for the past week having as many as 12 bloody diarrheal stools a day with intermittent vomiting. Infant was on an evaporated milk formula. Examination revealed a well developed, well nourished, colored male infant, temperature 101.4. Examination essentially negative except that the throat was slightly injected. Infant

was treated symptomatically, and given one-fourth tablet sulfapyridine every four hours. The temperature dropped to normal in 24 hours, and the stools became yellow and formed. Infant was discharged on 5/4/40 improved. Laboratory work: Hbg. 58 per cent, WBC 15,400, 54 per cent polys, 46 per cent lymph. Stool culture revealed no member of the typhoid or dysentery group present.

SUMMARY

Sixteen cases of infectious diarrhea are presented in which I feel sulfapyridine was a specific chemotherapeutic agent. Within 24 to 48 hours after the first dose of the drug, the temperature dropped to normal and shortly after the stools returned to normal. In nine cases, stool cultures were negative for members of the typhoid or dysentery group. In the remaining cases, no stool cultures were obtained. In this limited series, there was one death, the sulfapyridine being discontinued because the infant was unable to retain the drug. I believe that had I been able to continue the use of sulfapyridine in this case, it would not have terminated fatally. In these cases, I encountered no serious complication from the use of sulfapyridine, the minimum dose of the drug was administered and its action was apparently prompt.

CONCLUSION

I feel that sulfapyridine is an effective chemotherapeutic agent in the treatment of infectious diarrhea.

Stevens Clinic Hospital.

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CEREBRAL CYSTS

By H. J. ERWIN, M. D.
Lakin, West Virginia

THE word tumor, in its general sense, means only a swelling whether it is produced by fluids, heaping up of tissues, collections of chemicals or otherwise, but we use it in the sense of an autonomous growth; hence the term neoplasm. The time is long since past when intracranial new growths as a whole can be profitably discussed. It is true that all intracranial tumors, if allowed to persist a sufficiently long time, will give rise to intracranial hypertension.[1] It is also true many intra-abdominal tumors cause a corresponding enlargement of the abdominal wall, yet how imperfect would it be to discuss uterine fibroid and peritoneal endometriosis as similar lesions, yet they are all abdominal tumors. Intracranial new growths are many and varied and demand a separate study for each type of new growth. In such a discussion, it is no gain to say that we will gradually forget what we have learned as cardinal sign posts of intracranial neoplasm (headache, vomiting, and failing vision) and substitute in its stead the one cardinal symptom of tumor of the nervous system which is a nonfebrile, steadily increasing alteration of nervous function.

THE AUTHOR

Dr. Herbert Jones Erwin, Jr., graduated Meharry Medical College, Nashville, Tenn., in 1937. Physician at Lakin State Hospital for colored insane.

CLASSIFICATION AND FREQUENCY

Tooth's analysis of 258 cases of cerebral tumor verified either at operation or autopsy, showed that only five, or one and nine-tenths per cent were of cystic character.[2] At the Mayo Clinic McK. Craig and Kernohan[3] reported that between ten and fifteen per cent of all surgical conditions affecting the brain were of the cystic variety. Kozol[4] reports a

case in which a thalamic syndrome was treated by excision of a porencephalic cyst; Grant,[5] and others, presented a series of nine cases, and Siegmund reported one hundred and twenty cases of porencephalic cysts. This particular group of conditions has been considered as to etiology and has been subsequently divided into the following:

(1) Inflammatory, (2) traumatic, (3) parasitic, (4) neoplastic, (5) congenital.

Inflammatory cysts are relatively rare and consist of collections of fluid in the chronically inflamed pia-arachnoid. Traumatic cysts may be briefly divided into subdural hematoma, some calcified, and some occurring as simple cysts. Of the parasitic cysts, by far the most common is the collection of fluid due to infestation by the echinococcus. The neoplastic cyst is the most common, occurring in direct proportion to the occurrence of neoplasm within the cranial cavity. Congenital cysts may be subdivided into porencephalic, epidermoid, and simple. Porencephalic cysts either communicate with the subarachnoid space and the ventricle or extend so deeply into the substance of the brain that they distort the ventricular outline.

DEVELOPMENTAL ANATOMY

In order to understand the many and varied conditions which may affect the cortex, it is well that we understand something concerning the development of this structure. Interruption[6] of the normal process of development of the nervous system leads to defects of various types and degrees, some of which have little or no clinical expression, while others are incompatible with life. The boundary line between the malformations and the degenerations of the nervous system is a narrow one since the retrograde changes either begin very early in life or very late. The cortex of the cerebral hemispheres develops from the simple neural tube with the formation of an increasing number of layers of cells migrating from the ependymal and mantle layers bordering the ventricles. The primary fissures appear during the third month, the secondary during the fifth month, and the smaller during the seventh. Interruption in the development of fissures leads to the formation of broad convolutions with poorly formed gyri. Before the cortex becomes laminated, the cells are grouped in a more or less stratum compactum at the periphery which exhibit irregularities not unlike those seen in the stratum germinativum of the skin, a state which has been termed "status verrucosus simplex." Further still there is a layer of cells just beneath the meninges, which is called the external granular layer. In the cerebellum this disappears normally at the seventh month, but at times it may be present in the cerebellum at the time of birth and may be mistaken for meningitis. Persistence of the "status verrucosus simplex" frequently results in microgyria, cyst formation, and immature cortices.

DISCUSSION

Injury or disease of the brain during its developmental period may result in several different types of conditions. Sclerotic[7] processes occurring in a given locality may give rise to irregular patches of gliosis, free cell areas, and a porous subcortical white matter not unlike that seen in tuberous sclerosis. If the destruction is sufficient to obliterate entirely the tissue between the surface and the ventricle, porencephaly results. While this condition may be due to the failure of the neural tube to close, it may also result from extensive destructive processes occurring in the tissues which are located between the surface and the ventricle, as has been alluded to elsewhere in this discussion. Often the outermost layer, or more properly the molecular zone, of the cortex is spared and this may be adherent to the pia-arachnoid. It is well to mention here that the ventricular lining is most resistant to degeneration and therefore may even project outward to encounter the sunken outer molecular layer of the cortex. The tissue in between is made up of a reticulum of fibers most of which are connective in the main, but have been seen to carry a few small vessels and some glia mesh-

work. The reactive powers of the glia are weak in infancy, so that there is a greater tendency to cyst formation then than during adult life, yet it is not a rarity after maturity.

CASE REPORT

The report of a single case seems desirable on account of its unique nature and its similarity to the behavior problems of today.

W. H., age 55, was admitted for observation February 3, 1933, with a history of dizziness and "falling out spells." Anamnesis further revealed that the patient was at times greatly excitable; would run away from home, talked continuously, and displayed fixed ideas of persecution. No other relevant data were available. Examination revealed blood pressure to be 190/100, "poor vision" and slight muscular weakness of the left upper extremity. Diagnosis ventured at that time was manic depressive psychosis hypertension.

The patient had apparently experienced little discomfort until October 16, 1939, when he complained of a severe bursting headache, which was worse at night and was not relieved by heavy sedative. Neurological examination showed that there was papilledema. O.U., (three diopters) with pupils two mm. in diameter, which were reactive. Other cranial nerves were intact. Lobe investigation showed spasticity of the left upper extremity, and loss of the sense of position and movement and of tactile sensibility on the entire right side. The cerebellum and spinal cord were not remarkable. The reflexes were as follows:

	R	L
Biceps	1 plus	4 plus
Triceps	2 plus	4 plus
Radial	0	0
Groping	absent	
Hoffman	0	0
Abdominals	present	0
Cremasteric	present	0
Knee kicks	1 plus	3 plus
Oppenheim	0	0
Gordon	0	0
Chaddock	0	1
Babinski	0	positive

In view of the existing bilateral choked disc,[8] only a few cubic centimeters of spinal fluid were removed and that for diagnostic purposes only. The intraspinal pressure was elevated (36 mm. hg. in the recumbent position). Sixteen WBC were present and they were of the lymphocytic variety. The Nonne was three plus, and the Wassermann reaction as well as the gold sol were negative. A lateral radiogram of the skull revealed typical "beaten silver appearance."[9]

On the basis of the combined findings in the case, the following diagnosis was made: Cerebral glioma, Rt. involving area four and five (Foerster). Ten hours later the patient lapsed into a deep coma and in spite of heroic measures died.

NECROPSY (CRANIAL CONTENTS)

The bones of the skull were of normal thickness, showed no osteitis, porosis, or fracture. The brain weighed 1230 gms. While the brain was still in situ, an obvious asymmetry was noted due to a bulging mass in the right parietal area. Upon opening the dura and exposing the brain, there was seen a cyst bounded below by a line midway between the Sylvian fissure and the superior temporal sulcus; above by the longitudinal division of the intraparietal sulcus of Turner; posteriorly by the angular gyrus, and anteriorly by the precentral sulcus. In removing the brain from the cranial cavity the cyst was ruptured yet samples of the fluid failed to reveal evidence of hooklets or mitotic cells. In that area involved by the cyst no cortical tissue was now present. Grossly there seemed to have been an intervening meshwork between the lateral wall of the right lateral ventricle and the cyst, which probably prevented its rupture into the subarachnoid space. The base and subtentorium were not remarkable.

COMMENT

The absorption of the psychiatrist in the problems of mental mechanisms, behavior manifestations, and situational relations is so magnificently complete in this day of dynamic psychiatry that he frequently fails to consider that the patient has a physical body. The reports from mental hospitals which show the causes of death might lead one to believe that mental patients do not have cancer, that Koch's infection is a rarity among them, and that in short nothing is wrong except "cardiorenal disease and senility", yet mental patients are just as susceptible to physical disorders as the normal population. Therefore the psychiatrist, who understands that the causation of psychosis may be in one or all of three fields, social, psychological[10] or physical, will not fail to take into account the soma when examining his patient. The body is a

part of the individual's environment, and cannot be disregarded in an attempt to estimate the effect of the environment on the mental life of the patient.

Whether physical disorder has a specific effect in the production of the psychosis has not, with few exceptions, been proven yet that entire subject demands more research. However, if a physical disease does not cause the psychosis through specific channels, it cannot be denied that the reaction to illness may color or change the symptomatic picture. Disease is not only a pathological process but also an experience in life and, as with all experiences, the patient must adjust to it.

CONCLUSION

This case has been presented from the routine of the day's work to exemplify a single truth; namely, that advanced organic disease of the nervous system may manifest itself only by psychopathic behavior. One realizes that few such cases are to be found in the practice of psychiatry. However, it seems more reasonable to believe that many more are seen in the practice of medicine. This case finally teaches two lessons the first of which is very simple but rather far reaching: "appearances are often deceptive", and the second is that probably some "scuttling" is needed concerning the values that make for diagnosis in this present day medicine.

Lakin State Hospital.

DISCUSSION

Dr. Edward F. Reaser, Psychiatrist, Huntington: I have read with considerable interest this paper on cerebral cysts. In the case report it does not seem apparent just what type of cyst was encountered, and I presume that one could not determine that. The probability is that the patient had the cyst for many years. The hypertension may have been aggravated by the increased intracranial pressure resulting from space restriction resulting from the expansion of the cyst. I witnessed an autopsy once of an old man in which we unexpectedly found a large tumor. This tumor had not previously been suspected. The diagnosis on the hospital record was epilepsy. I had never examined the patient and do not know what neurological signs he may have presented.

I am heartily in accord with the view that the psychiatrist must not cease to be alert for physical diseases in his patients. Disease occurs at all levels, somatic or psychic. We can not separate the functions and treat one to the exclusion of the others. We must keep in mind constantly the whole function of the integrated individual and recognize changes in whatever level they appear. Many psychiatrists allow physical diseases to develop and grow under their very eyes because their attention is devoted to the mental levels entirely.

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Low Fat Diet

A diet low in fat, daily administration of vitamin B_1 by mouth and the use of an ointment appears to be the most effective combination of treatments yet available for psoriasis, a common skin disease, John F. Madden, M.D., St. Paul, maintains in *The Journal of the American Medical Association* for August 24.

Psoriasis is a chronic ailment of undetermined origin characterized by red, scaly papules and patches and unassociated with any disturbances of the general health. It is rare in small children, but frequently begins in the late teens and recurs at intervals throughout life. It most commonly appears on the extensor aspects of the limbs, especially the elbows and knees, but may also involve the trunk, scalp, face, nails, palms and soles.

While there have been reports of improvement of psoriasis from vitamin D treatment, Dr. Madden concluded that: "Vitamin D was not only generally of no value in this group of cases of psoriasis but was a dangerous medication in some cases. It should never be given in massive doses except when the patient is under frequent observation. The patients who tolerated vitamin D well usually showed no change in their eruption. The degree of improvement in the psoriasis corresponded to the severity of the reaction to vitamin D. When reactions subsided the psoriasis recurred."

President's Page

Looking back on the White Sulphur Springs meeting, I become more and more impressed with the excellence of the various committee reports which were made to the House of Delegates. Our committees have worked hard during the past year and they gave us a splendid accounting of their activities. It seems a shame that these reports were not thoroughly discussed when they were presented. It is true that the reports were published in the Handbook and mailed to the delegates and officers in advance for thorough study. However, it was never intended that the Handbook would eliminate consideration of these reports. It was meant simply to expedite the work of the House of Delegates.

All committee reports presented at White Sulphur Springs were accepted and filed. I think it would be a good idea to briefly summarize some of the recommendations. The Postgraduate Committee recommended that a week be set aside each fall during which each scientific section and specialty society of the Association would meet for a full day's program.

The Legislative Committee asked the House of Delegates to discuss and, if possible, to reach a decision on the type of legislation to be sponsored by the Association during the 1941 session.

The Medical Service Committee presented several alternatives to the House of Delegates in regard to handling problems relating to industrial medicine, and asked for discussion.

The Syphilis Committee presented several pertinent and important questions relative to the free use of the state laboratory, the use of only council-accepted products by the State Health Department, and the distribution of free drugs for the treatment of syphilis.

All of these important questions were passed over and it will be another year before the House of Delegates is again in session. Our committees must function for the next twelve months largely without the guidance which they requested.

Dr. Vest made a suggestion at White Sulphur Springs which I think is a good one. He suggested that the House of Delegates be reorganized with a number of special reference committees to consider the various committee reports and recommend the proper procedure in acting on committee recommendations. After presentation of the committee reports at the first meeting of the House of Delegates, they would be referred to the proper reference committees. The reference committees would then report their recommendations at the second meeting for final consideration. We hope Dr. Vest will present his plan in concrete form next year.

Frank V. Langfitt

President.

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INJUNCTION APPLIED FOR

A legal case of great interest to the medical profession of West Virginia was filed in the circuit court of Kanawha county on August 21 by Dr. George P. Naum against the Kelley's Creek Colliery Company for alleged unlawful practice of medicine. Dr. Naum was previously employed by the coal company. He contends the company collected a fixed amount from employees wages for medical service, paid him a portion of the amount collected and the remainder was retained by the company.

Filing on behalf of himself and other physicians and surgeons similarly situated, Dr. Naum is seeking an injunction halting such practice. A second suit asks for an accounting of back wages claimed due him by the coal company. Co-defendants in the two actions are the Kelley's Creek Barge Line, Inc., Kelley's Creek and Northwestern Railroad Company and the Valley Camp Stores Company.

The injunction suit was filed in behalf of the West Virginia State Medical Association and was authorized by the Council at the White Sulphur Springs meeting on July 28. Mr. Ben Moore, Association attorney, is handling the injunction angle.

It has been estimated that approximately 20 per cent of the coal companies in southern West Virginia are engaged in the practice of medicine for profit. Many instances have been brought to the attention of the Association in which coal companies profit to the extent of $500 to $600 per month by employing a doctor on salary and selling his services to their employees. Physicians who are so employed rarely complain of their predicament for fear of losing their jobs.

The practice of profiteering on the medical service of industrial employees is indeed deplorable. The system exacts undeserved money from employee and doctor without contributing anything to the welfare of either. If the Association is successful, through Dr. Naum, in securing an injunction in the present case, it is felt that the entire abuse can be cleaned up.

AUGUST IS QUIET

August is a quiet month, especially in the field of organized medicine. County society activities are usually suspended and August is utilized by the State Association to clean up after the annual meeting and get ready for fall activities.

A number of interesting August items have turned up during the past 31 days. Doctors worked on their medical preparedness questionnaires and more than a hundred requests were received at headquarters for additional copies. West Virginia physicians returned better than 50 per cent of the questionnaires issued, which is neither good nor bad. Dr. Tom Burgess of Williamson wrote in at the age of seventy-odd to say that he was ready "for the defense of the United States of America." Dr. Oscar Biern and Dr. Jim Klumpp of Huntington were ordered to active recruit duty in the Navy.

So much for the war situation in August. Dr. E. R. Davies was imported from Maryland to take over the Kanawha county health job. He was formerly health officer of Preston county. Dr. G. C. Robertson was appointed on the Association's Public Assistance Advisory Committee. Increased grants for medical aid were awarded 519 classified assistance clients for a total of $5,238. Half of this comes from the federal government.

The postgraduate refresher courses wound up in August and made out nicely. Final

figures were not tabulated in time for this JOURNAL, but county reports indicated that the courses were splendid and the attendance good.

Relief jobs were plentiful during August, indicating that many overworked doctors either took vacations or attended officers training camps.

MEDICAL PREPAREDNESS

Almost 80,000 of the 180,000 medical preparedness questionnaires sent to physicians by the American Medical Association have been filled out and returned. The percentage of return in West Virginia is approximately 48 per cent, which is somewhat higher than the national average but still leaves plenty of room for improvement. During the past two weeks more than 100 requests for extra copies of the questionnaire have been received at Association headquarters, and this should boost the West Virginia returns to well over 50 per cent.

The largest return to date has been received from Nebraska with more than 71 per cent. New Mexico, Mississippi and Tennessee have made the smallest returns.

The A. M. A. Committee on Medical Preparedness is endeavoring to have a file card on every physician in the United States, regardless of his ability to render military service. We believe this factor has been overlooked by many doctors, who consider themselves too old for military service and who discarded the questionnaire for that reason. The real purpose of the questionnaires is not to muster physicians into military service but to have the medical profession so well classified that if an emergency should arise, doctors would be placed in positions (military or non-military) where the government could reap the full benefit from their past training and experience. In the language of the street, the questionnaires are designed to keep round pegs out of square holes.

The West Virginia Committee on Medical Preparedness is doing a good job in getting the questionnaires back to the American Medical Association. Postcard reminders sent to every physician in the state brought a fine response. Probably within the next week or 10 days, county medical society officials will be requested to contact every member by telephone in a final roundup. The committee feels that this is an excellent opportunity to demonstrate to the government not only the loyalty and patriotism of the medical profession but the ability of the profession to mobilize itself without outside help.

SOLDIER'S HEART

Adequate examination should make possible the institution of preventive or early treatment measures for neurocirculatory asthenia or "soldier's heart," one of the most frequent causes of invalidism among soldiers, *The Journal of the American Medical Association* for August 17 declares in an editorial which points out that modern warfare will also make the condition widespread among civilians.

The condition is a syndrome or set of symptoms occurring together. It is characterized, *The Journal* points out, "by labored breathing, fatigue and exhaustion, palpitation or heart consciousness, fainting, giddiness, sweating, blueness or mottled coloring of the hands and a variety of neurovascular (nerve and blood vessel) phenomena. The pulse at rest and in sleep is normal but is easily accelerated by emotion or exercise and is abnormally slow in its return to normal after exercise. Blood pressure is as a rule normal at rest but exhibits the same exaggerated response to exercise and emotion as does the pulse. The electrocardiogram does not reveal any structural changes. The symptom phosphaturia, so commonly observed in neurotic patients, is common especially after light exercise."

The editorial says:

"The appearance of the second edition of Sir Thomas Lewis' 'The Soldier's Heart and the Effort Syndrome' focuses the attention

of physicians once more on one of the most frequent causes of invalidism among soldiers. 'Soldier's heart,' 'the irritable heart of soldiers,' 'disturbed action of the heart,' 'effort syndrome' and 'neurocirculatory asthenia' is not a disease. It is rather a complex of characteristic neurovascular symptoms, which occur with sufficient regularity to justify grouping into a definite syndrome. This condition is not an organic disease of the heart or a clinical entity with definite pathologic (disease) appearances. Neither is it peculiar to war conditions. Modern warfare with all its horrors, the physical and emotional strain and the constant fear of death which it invokes is bound to reap a rich harvest of victims of neurocirculatory asthenia. The extension of the horrors of war to the civilian population multiplies the cases beyond measure. In the war of 1914-1918, Sir Thomas Lewis states, for every four wounded there was one cardiovascular (heart and blood vessel) case in the British Expeditionary Force. Seventy thousand had reported sick and were classed as cardiovascular by the summer of 1918, and 44,000 soldiers with effort syndrome (neurocirculatory asthenia) became pensioners. Actually no more than one out of six of these soldiers suffered from disease of the heart. The rest represented cases of 'effort syndrome.'

"To differentiate the condition from organic disease of the heart," the editorial continues, "the English classified these cases as 'disturbed action of the heart (D. A. H.)' The effect of suggesting 'something wrong with the heart' in a condition of undoubted neurogenic (originating in the nervous system) character had anything but a salutary effect on the patients. For this reason, and because the symptoms resembled those of fatigue following effort in normal persons, Lewis gave it the name 'effort syndrome.' The name 'neurocirculatory asthenia' was suggested by a team of medical reserve corps officers of the American army sent to Colchester, England, to study the condition with Sir Thomas Lewis. They felt that the symptoms comprising effort syndrome in normal persons are not exactly the same as those observed in neurocirculatory asthenia.

"While the basic mechanism of neurocirculatory asthenia has not been elucidated, the tendency of students of the syndrome is to regard it as psychogenic autonomic (involuntary) nervous system. Given a neuropathic (nervous disorder) predisposition based on hereditary and constitutional inadequacy, many factors can assume the rôle of exciting or initiating agents. Among these, infectious or physical agents and the psychic (mental) strain of war are most important.

"The diagnosis of the syndrome presents few difficulties. Its differentiation from organic disease of the heart, however, calls for special training and experience in cardiology (study of the heart and its functions). The diagnostic problem likewise involves the recognition of possible associated disease such as pulmonary tuberculosis, exophthalmic goiter or malaria. The electrocardiogram, the roentgenogram, (x-ray film) and previous training and experience in cardiology should eliminate most of the earlier errors.

"Undoubtedly the most important phase in the treatment of this condition is prevention. Prophylaxis should properly begin at the time of enlistment and in the training camps. The faulty examinations in the last war are clearly illustrated, as pointed out by Lewis, by the fact that nearly half the patients invalidated for effort syndrome or heart disease developed the symptoms before joining the forces and more than half developed them before their training was complete. 'There is not the slightest doubt,' states Lewis, 'that adequate examination would have eliminated most of these men, would have kept them in useful employment, would have spared them much suffering, would have saved hospital space and large funds of the Ministry of Pensions. Such cases were six or seven months in training, five months in hospital, and gave in return 2.2 months of full and 1.5 to two months light duty.'

CONVENTION TRANSACTIONS

Seventy-third Annual Meeting, West Virginia State Medical Association
July 29, 30, 31, 1940

Minutes of State Meeting

Although the preliminary report of the White Sulphur Springs meeting appeared in the August JOURNAL, there was not sufficient time to prepare and publish the minutes of the meetings of the House of Delegates and the Council. So that all Association members may familiarize themselves with the various transactions at White Sulphur Springs, we are publishing the minutes of all meetings in this issue, together with the complete convention registration from each component society.

Council Meeting Minutes

The Council of the West Virginia State Medical Association met in the Virginia Room of the Greenbrier Hotel, White Sulphur Springs, W. Va., on Sunday evening, July 28, 1940 at 8:30 o'clock. The meeting was called to order by Dr. Ray M. Bobbitt, chairman. Those present were Dr. Frank V. Langfitt, president; Dr. T. M. Barber, treasurer, and Doctors George W. Easley, H. L. Goodman, D. C. Peck, Philip Johnson, L. W. Deeds, Raymond Sloan, Robert K. Buford, B. S. Brake and R. V. Shanklin. Also Mr. Joe W. Savage, executive secretary.

Visitors in attendance were Doctors Walter E. Vest, Fred R. Whittlesey, James R. Bloss and J. Howard Anderson of the editorial staff of the WEST VIRGINIA MEDICAL JOURNAL; Walter E. Brewer, L. E. Steele of Logan, and C. O. Henry, Fairmont.

The reading of the minutes of the previous meeting was dispensed with on motion of Dr. Deeds and the minutes were approved as published.

The reading of the reports of officers and committees was dispensed with on motion of Dr. Johnson and the reports were accepted and filed as published in the handbook.

Dr. Bobbitt reviewed for the Council the work of the 1939 Low Cost Study Committee relating to hospital payment for treating compensation injuries. It was pointed out that certain hospitals were collecting 20 cents per month per employee from the employers of labor, in return for which they agreed to render complete medical, surgical and hospital service to injured employees and not to render any bills through the Workman's Compensation Fund. Dr. Bobbitt pointed out that the Low Cost Study Committee and the present Medical Service Committee had both recommended strongly that compensation cases be paid for through the compensation department, as provided by law.

After a thorough discussion participated in by Drs. Peck, Deeds, Johnson, Sloan, Buford and Barber, it was moved by Dr. Sloan that a special sub-committee of the Medical Service Committee be designated to further study this problem and report back at the next Council meeting. This motion was seconded by Dr. Johnson and carried.

On motion of Dr. Deeds, seconded by Dr. Sloan, honorary membership was conferred on Dr. George P. Daniel of Glen Daniel; Dr. T. J. Casto, Dr. G. C. Schoolfield and Dr. V. T. Churchman, Sr., of Charleston.

On behalf of the Publication Committee, Dr. Vest asked the Council to hold up on the election of a successor to Dr. Anderson until some meeting later in the year. He pointed out that there would probably be two committee vacancies later on. Dr. Peck moved that the election be deferred. This motion was seconded by Dr. Buford and carried.

Mr. Savage called attention to the vacancy on the state orthopedic advisory board to the Department of Public Assistance, due to the expiration of the term of Dr. J. O. Rankin of Wheeling. The Council voted to recommend for this vacancy Dr. J. C. Pickett, Morgantown; Dr. H. G. Weiler, Wheeling, and Dr. A. R. Lutz, Parkersburg.

INJUNCTION SOUGHT

It was reported that Dr. G. P. Naum, formerly of Ward, was preparing to sue the Valley Camp Coal Company for back salary which he claimed the company had held out for alleged rent on fictitious medical equipment. Dr. Barber moved that Mr. Ben Moore, Association attorney, be authorized to enter this case if he felt that an injunction could be secured against the Valley Camp Coal Company to stop future similar practices. The motion was seconded by Dr. Sloan and carried.

Mr. Savage presented letters from four Beckley physicians requesting the aid of the Council in eliminating the hospital list work within the city of Beckley. It was suggested by Dr. Buford that this matter should properly come before the Raleigh County Medical Society before it could be officially considered by the Council. Mr. Savage was instructed to advise the four doctors to bring the matter before the Raleigh society and then to appeal to the Council if they were not satisfied with the action of the Raleigh society.

W. VA. INDIGENT PROGRAM

Mr. Savage presented a letter from *Medical Economics* advising that this magazine was preparing an article on indigent medical service in West Virginia and requesting copies of any published reports or documents that might be available, in order that the article could be written as accurately as possible. After a lengthy discussion, in which different members of the Council expressed disapproval of the type of advertising carried by *Medical Economics*, it was voted to furnish the information requested.

Dr. Peck called attention to the misuse of the state hygienic laboratory, particularly in the case of physicians securing syphilis serologic tests for marriage certificates. Dr. Peck stated that physicians would occasionally send blood specimens to the state laboratory, certifying that the patients were indigent, and then collect their own fees from such patients. It was Dr. Peck's contention that men or women who were about to be married and who could afford to pay the physician's fee, should not be classified as indigent and should not receive free laboratory work from the state laboratory. On motion of Dr. Peck, seconded by Dr. Sloan, Mr. Savage was instructed to write to all the county societies calling this to their attention.

Dr. Buford spoke in praiseworthy terms of the handbook for the officers, councillors and members of the House of Delegates, in which all officers' and committee reports were published in advance. On motion of Dr. Buford, seconded by Dr. Sloan, it was voted to continue the publication of the handbook each year.

There being no further business to come before the Council, the meeting adjourned at 10:50 p. m.

The second meeting of the Council was held in the Royal Norwegian Suite of the Greenbrier Hotel, White Sulphur Springs, West Virginia, at five o'clock on Tuesday afternoon, July 30, 1940. Those present were Dr. Ray M. Bobbitt, chairman; Dr. Frank V. Langfitt, Association president; Doctors D. C. Peck, R. V. Shanklin, R. K. Buford, Raymond Sloan, C. W. Waddell, B. S. Brake; T. M. Barber, treasurer, and Mr. Joe W. Savage, executive secretary.

Dr. Bobbitt called the meeting to order for the purpose of considering ways and means of financing the removal of the Reeves monument from Rivesville to Fairmont. After a thorough discussion, during which it was agreed to accept the aid of the City of Fairmont and the State Road Commission on moving the monument, it was moved by Dr. Buford that an amount not to exceed $300.00 be appropriated for the purpose of moving the monument and making any necessary changes in the bronze plaque. This motion was seconded and carried.

Dr. Waddell and Mr. Savage were instructed by the Council to look after and supervise moving and changing the monument at the least possible expense to the Association.

The meeting adjourned at 5:35 p. m.

JOE W. SAVAGE,
Executive Secretary.

House of Delegates

The House of Delegates of the West Virginia State Medical Association met in the auditorium of the Greenbrier Hotel, White Sulphur Springs at 4:30 p. m. on Monday, July 29, 1940. Dr. Frank V. Langfitt, president, presided. The following members were present:

Doctors T. M. Hood, C. O. Henry, James R. Bloss, J. H. Anderson, W. E. Vest, Roy Ben Miller, Frank V. Langfitt, W. E. Whiteside, S. G. Moore, Guy H. Michael, Harold Howell, H. L. Hegner, M. T. Morrison, A. B. Bowyer, M. H. Porterfield.

Doctors R. H. Jones, D. G. Preston, E. R. McNinch, L. E. Neal, H. V. Thomas, C. O. Post, Russel Kessel, T. G. Reed, P. A. Tuckwiller, Randolph Anderson, W. W. Point, C. B. Smith, John Haley, J. W. Carney, J. L. Patterson, E. H. Starcher, John P. Helmick.

Doctors J. L. Blanton, J. B. Clinton, E. D. Wise, R. H. Edwards, R. O. Rogers, H. G. Steele, J. C. Lawson, G. T. Conley, Ivan Fawcett, H. O. Little, C. H. Clovis, R. W. Love, T. L. Harris, Athey R. Lutz, H. C. Miller, D. C. Ashton, L. M. Halloran, E. C. Blum.

Minutes of the preceding meeting were approved as published in the WEST VIRGINIA MEDICAL JOURNAL.

The following reports were accepted as published in the House of Delegates Handbook:

Report of Treasurer.
Report of Executive Secretary.
Report of Medical Service Committee.
Report of Legislative Committee.
Report of D.P.A. Advisory Committee.
Report of Maternal Welfare Committee.
Report of Child Welfare Committee.
Report of Syphilis Committee.
Report of Industrial Hygiene Committee.
Report of Postgraduate Committee.
Report of Committee on Necrology.

Following some discussions of the methods of adopting the committee reports, Dr. Vest suggested that the House of Delegates be reorganized with reference committees to consider all reports of officers and committees.

MEDICAL PREPAREDNESS

Dr. Fred W. Rankin of Lexington, Kentucky, representing the American Medical Association as director of Medical Preparedness in the Fifth Corps Area, was presented and spoke on the work of the American Medical Association in its mobilization plan for the medical profession. Dr. Rankin particularly urged all physicians to send in their mobilization questionnaires which have been sent to them by the American Medical Association.

Dr. Vest presented the following resolution:

"WHEREAS, It has come to our attention that Paramount Pictures, Inc., is in the process of making a film based upon the life of Dr. W. T. G. Morton, a Boston dentist, as the discoverer of ether anesthesia, and

"WHEREAS, Unmistakable proofs show that Crawford W. Long used sulphuric ether to produce surgical anesthesia in Jefferson, Georgia, on March 30, 1842, and

"WHEREAS, Undoubted records show that this was the first time in history that ether was ever used for this purpose, and

"WHEREAS, The Congress of the United States has recognized Crawford W. Long as the first to use sulphuric ether, and

"WHEREAS, The United States Post Office Department has recognized Crawford W. Long as the first to use sulphuric ether for the purpose of surgical anesthesia by printing a postage stamp in his honor, and

"WHEREAS, The Southern Medical Association nineteen years ago appointed a committee representing each of the seventeen states composing the Southern Medical Association to study available records and report after their findings, and which committee after a period of study of one year unanimously reported that Crawford W. Long was the discoverer of ether anesthesia,

"*Therefore, be it Resolved,* That the West Virginia State Medical Association, regularly assembled in its seventy-third annual session, July 29, 1940, at White Sulphur Springs, West Virginia, declares that Crawford W. Long of Georgia was the discoverer of ether anesthesia and the first to use ether anesthesia for any operative procedure and is entitled to full credit and honor for the achievement, and

"*Be it Further Resolved,* That Paramount Pictures, Inc., be requested by the West Virginia State Medical Association to desist from its announced intention of making a film honoring Dr. W. G. T. Morton, a Boston dentist, as the discoverer of ether anesthesia, because such a procedure would be contrary to the established facts and would give honor to whom honor is not due."

Dr. Vest moved the adoption of the resolution. This motion was seconded and carried.

CHANGE IN BY-LAWS

Dr. Russel Kessel presented the following resolution by request:

"*Be it Resolved,* That Section 1 of Chapter VII of the By-Laws of the West Virginia State Medical Association, which now reads: 'The Council shall meet on the day preceding the annual session and at such other times as necessity may require, subject to the call of the chairman or on petition of five councillors. It shall, through its chairman, make an annual report to the House of Delegates', be and is hereby amended to read as follows:

" 'The Council shall meet on the day preceding the annual session and at least three other times at regular intervals during each year in order to transact the business and other affairs of the Association. The Council may meet at such other times as necessity may require, subject to the call of the chairman or on petition of five councillors. It shall, through its chairman, make an annual report to the House of Delegates.' "

This resolution was placed on the table for consideration at the next meeting of the House of Delegates.

Dr. Thornhill presented a plan to the House of Delegates to alternate the annual meeting each year between White Sulphur Springs and Clarksburg, Charleston and Huntington. Dr. Thornhill's plan

is to divide the state into three districts with Clarksburg, Charleston and Huntington as the central cities in each district. Under Dr. Thornhill's plan, each district would entertain the society once every six years and the society would meet at White Sulphur Springs each alternate year.

UNIFORM NARCOTIC ACT

Dr. J. W. Carney presented the following resolution:

"WHEREAS, The 'Uniform Narcotic Drug Act' which was passed by the legislature on March 8, 1935, and became effective ninety days from passage without the approval of the governor, gives the State Board of Pharmacy the right to regulate the sale at retail or dispense at retail to a person except upon the written prescription of a physician, dentist, or veterinarian, malonyl urea (barbituric acid) as such, or diethylmalonyl urea as such, or any sodium or potassium salt, or either of them, under whatever name they may be designated, or any sodium or potassium salt of any chemical derivative, malonyl urea, diethylmalonyl urea under whatever name they may be designated, and

"WHEREAS, The State Board of Pharmacy has failed to regulate the sale of malonyl urea or any of its salts, derivatives, mixtures or preparations, except barbital and diethyl-barbituric acid, or the same under any trade name, and the said Board of Pharmacy permits the pharmacist to refill the prescription as often as he may elect unless the physician writes on the face of said prescription, 'not to be renewed', or words to that effect, and

"WHEREAS, The personnel of many drug stores are not all registered pharmacists, and

"WHEREAS, The privilege of individuals to purchase the above-named compounds is grossly abused and the said purchase is detrimental to the public welfare,

"*Therefore, be it Resolved*, That the West Virginia State Medical Association favors strict regulations in the sale of said compounds, under whatever name they may be designated, and should be sold only on prescription by a registered physician, dentist or veterinarian and should not be refilled,

"*Be it Further Resolved*, That the following words, 'as defined by regulations of the State Board of Pharmacy', should be deleted or eliminated from lines seven and eight, Section 21, Chapter 46, of the law passed March 8, 1935."

Dr. Bloss moved that the resolution be referred to the Legislative Committee with a request that the resolution be given prompt attention and the matter brought before the next session of the legislature. The motion was seconded by Dr. Morrison and carried.

Dr. Vest discussed the possibility of the Association establishing an educational fund to be used as a revolving fund and loaned to worthy medical students.

Following an interesting discussion by Dr. C. O. Henry of the Reeves Monument, the House of Delegates voted permission to move this monument from its present site at Rivesville and place it on the lawn of the new Municipal Hospital at Fairmont. The House of Delegates also voted permission to make any corrections that might be necessary on the bronze plaque. The financing of this project was referred to the Council.

The meeting adjourned at 6:10 p. m.

SECOND MEETING

The second meeting of the House of Delegates was held on Tuesday evening on July 30, 1940. The meeting was called to order at 10:05 p. m. by the president, Dr. Langfitt. Those present were:

Doctors T. M. Hood, C. O. Henry, J. H. Anderson, George D. Jeffers, W. E. Vest, Rome H. Walker, C. W. Waddell, Frank V. Langfitt, H. C. Myers, S. G. Moore, Guy H. Michael, Harold Howell, H. L. Hegner, James Brown, Chauncey Wright, A. G. Rutherford, Oscar Biern.

Doctors M. T. Morrison, Eugene Brown, A. B. Bowyer, M. H. Porterfield, G. P. Morrison, N. L. Cardey, A. G. Lanham, D. G. Preston, E. R. McNinch, L. E. Neal, H. V. Thomas, W. T. Gocke, C. O. Post, Russel Kessel, T. G. Reed, P. A. Tuckwiller.

Doctors Randolph Anderson, W. W. Point, Wm. A. Thornhill, Hugh Bailey, Bert Bradford, J. W. Carney, J. L. Patterson, E. H. Starcher, John P. Helmick, J. L. Blanton, J. B. Clinton, Rush Lambert, C. R. Hughes, R. H. Edwards, G. P. Evans, Frank Holroyd, R. O. Rogers, H. G. Steele, G. T. Conley.

Doctors J. C. Lawson, Carl E. Johnson, R. R. Sumners, Justus C. Pickett, J. O. Rankin, Ivan Fawcett, Howard Phillips, H. G. Little, R. W. Love, A. M. Dearman, T. L. Harris, J. L. Wade, A. C. Woofter, H. C. Miller, E. B. Wray and E. C. Blum.

Before proceeding with the regular order of business, Dr. C. W. Waddell, representing the Association, presented Dr. Langfitt with the presidential charm.

NEW OFFICERS FOR 1941

President, Dr. Robert King Buford, Charleston; first vice president, Dr. M. H. Porterfield, Parkersburg; second vice president, Dr. D. G. Preston, Lewisburg; treasurer, Dr. T. M. Barber, Charleston; A.M.A. delegate, Dr. Walter E. Vest, Huntington; A.M.A. alternate, Dr. W. P. Black, Charleston; first district councillor, Dr. J. B. Clinton, Fairmont; second district councillor, Dr. A. P. Butt, Elkins; third district councillor, Dr. C. O. Post, Clarksburg; fourth district councillor, Dr. James L. Wade, Parkersburg; fifth district councillor, Dr. Frank Holroyd, Bluefield; sixth district councillor, Dr. Andrew E. Amick, Charleston; necrology committee, Dr. C. O. Henry, Fairmont; scientific committee, Dr. R. J. Wilkinson, Huntington, chairman; Dr. P. A. Tuckwiller, Charleston, and Dr. Howard Phillips, Wheeling; maternal welfare committee, Drs. W. E. Hoffman, Charleston; H. G. Steele, Bluefield; M. B. Williams, Wheeling; J. F. Williams, Clarksburg; E. F. Heiskell, Morgantown, and E. J. Humphrey, Huntington; committee on child welfare, Drs. Raymond Sloan, Huntington; Carl Johnson, Morgantown; Russel Bond, Wheeling; Harlow Connell, Bluefield; A. A. Shawkey, Charleston; Theresa Snaith, Weston; medical service committee, Dr. R. H. Walker, Charleston, and Dr. D. A. MacGregor, Wheeling; place of our 1941 meeting, Charleston.

PRESIDENT'S ADDRESS

Dr. Vest reported as chairman of the Committee on the President's Address as follows:

Your committee has considered carefully the address of our president and submits the following report for your consideration.

We commend especially the discussion of the work of the Committee on Postgraduate Education. One of the burning questions now facing the organized profession is the development of a technique for the prompt distribution of the ever increasing volume of medical knowledge to the physician in actual practice, the man on the firing lines, and organized medicine must perform this function.

We earnestly urge upon the individual members of the profession that our president's recommendation for increased activity in political circles be followed. It is the opinion of your committee, however, that we should engage in such activities as individuals rather than as organizations, and that support should be given to politics rather than to political parties.

Dr. Langfitt is to be congratulated upon his clear understanding of the duties of the medical profession toward medical appointments, the state eleemosynary institutions, and their inmates.

It is the opinion of your committee that the state legislature should be memorialized to increase materially the per capita appropriations for the care of the wards of the state, especially the insane. We are informed that only about fifty cents per patient per day is expended upon the insane, an utterly inadequate figure. Certainly this appropriation should be at least doubled by the incoming legislature.

Our president's comments upon prescription writings and the inordinate number of proprietary preparations, are worthy of special commendation. We would especially urge that his advice as to the prescribing of only pharmacopeial and national formulary preparations be followed, and that no "earmarked" materials be prescribed.

REGIMENTATION OF MEDICINE

Undoubtedly, as our president points out, the most serious threat facing the profession today is the shadow of regimentation and socialization. Happily, this is somewhat less serious at the instant than for some years past, but is still so ominous that we should be continuously on guard, educating the laity as to their danger lurking in such schemes. We especially urge that his recommendation for financial aid to the National Committee for the Extension of Medical Service be generously supported, although it is the opinion of your committee that financial support should be given as individuals rather than by medical organizations as such.

In closing, your committee endorses heartily our president's advice as to medical preparedness for military emergency and earnestly requests that each member of our Association fill in and return promptly the questionnaire of the American Medical Association relative to military fitness.

Respectfully submitted,

WALTER E. VEST, *Chairman*,
W. M. SHEPPE,
C. O. POST.

The report was unanimously adopted on motion of Dr. Vest, seconded by Dr. Morrison.

Dr. Walker moved the adoption of the following resolution, presented at the Monday afternoon session:

"*Be it Resolved*, That Section 1 of Chapter VII of the By-Laws of the West Virginia State Medical Association, which now reads: 'The Council shall

meet on the day preceding the annual session and at such other times as necessity may require, subject to the call of the chairman or on petition of five councillors. It shall, through its chairman, make an annual report to the House of Delegates', be and is hereby amended to read as follows:

" 'The Council shall meet on the day preceding the annual session and at least three other times at regular intervals during each year in order to transact the business and other affairs of the Association. The Council may meet at such other times as necessity may require, subject to the call of the chairman or on petition of five councillors. It shall, through its chairman, make an annual report to the House of Delegates.' "

The motion was seconded by Dr. W. T. Gocke and carried.

Dr. Vest read a letter from the West Virginia Optometric Association requesting the aid of the Association in taking some action in regard to osteopaths examining eyes for cut rate opticians. On motion of Dr. R. H. Walker, seconded by Dr. Michael this matter was tabled.

RIVESVILLE MONUMENT

Dr. Langfitt announced that the Council had held a meeting on Tuesday afternoon and had appropriated sufficient funds which might be necessary in moving the Association's monument from Rivesville to Fairmont.

Dr. H. V. Thomas presented the following resolution:

"WHEREAS, The National Committee for the Extension of Medical Service is national in scope and purposes, and

"WHEREAS, The aims of this committee embrace and include work and the dissemination of knowledge in the State of West Virginia,

"*Therefore, be it Resolved,* That the House of Delegates of the State Medical Association in regular session July 30, 1940, approve the activities of this committee."

Dr. Thomas moved the adoption of the resolution. The motion was seconded and carried.

At the request of Dr. Langfitt, the secretary read the following resolution which was adopted by the West Virginia Pharmaceutical Association on July 2, 1940:

"WHEREAS, The West Virginia State Pharmaceutical Association through its Committee on Professional Relations has for the past two years been disseminating to members of the West Virginia State Medical Association, educational material regarding the use of 'Official Medicines', and

"WHEREAS, This material is designed to encourage prescription writing by the physician in order to decrease the spread of self-medication, and to reduce the cost of medical care due to the cost of medicines, thereby encouraging the patient to seek the proper medical care, *viz.*, physician and pharmacist, and

"WHEREAS, After two years of experience in this work and noting the interest of the medical profession of our state in such a program, we believe this to be a problem of mutual interest to West Virginia medicine and pharmacy,

"*Now, Therefore, be it Resolved,* By the West Virginia State Pharmaceutical Association, in annual meeting assembled in White Sulphur Springs, W. Va., this second day of July, 1940, that if further work be done along these lines by this Association to promote better relations between West Virginia medicine and pharmacy, that we believe much more can be best accomplished through the efforts of a joint committee representing the West Virginia State Medical and the West Virginia State Pharmaceutical Associations, and

"*Be it Further Resolved,* That a copy of this resolution be forwarded to the president of the West Virginia State Medical Association and to the chairman of the House of Delegates of the same Association for study, and after due consideration, if the West Virginia State Medical Association deems further work along this line is desirable, that the Professional Relations Committee of the West Virginia State Pharmaceutical Association is instructed to cooperate in every way with the committee of the West Virginia State Medical Association in considering any joint action which might be taken on this mutual problem."

On motion of Dr. C. O. Post, seconded by Dr. Bloss, this matter was referred to the Committee on Professional Relations with instructions to act.

There being no further business, the meeting adjourned at 12:15 a. m.

Registration

Barbour-Randolph-Tucker — J. M. Brand, Coketon; R. J. Condry, Harold A. Conrad, Benjamin I. Golden, J. E. Martin, Jr., S. G. Moore, Elkins; Lewell S. King, Emory H. Main, E. E. Myers, Hu C. Myers, Karl J. Myers, Philippi; Guy H. Michael, Belington; S. Weisman and W. E. Whiteside, Parsons.

Boone—W. F. Harless, Madison.

Brooke—H. L. Hegner, Ray C. Otte, Wellsburg; S. Sprigg Jacob, Bethany.

Cabell—(The address is Huntington unless otherwise indicated.) H. E. Beard, Wm. F. Beckner, Oscar B. Biern, James R. Bloss, Ray M. Bobbitt, J. J. Brandabur, James R. Brown, F. L. Coffey, J. Russell Cook, Thos. G. Folsom, C. P. S. Ford, Thomas L. Grove, J. A. Guthrie, G. D. Johnson, Spencer; A. D. Kessler, James S. Klumpp, George M. Lyon, J. Hallock Moore, A. G. Rutherford, R. M. Sloan, Wm. W. Strange, W. C. Swann, Walter E. Vest, R. J. Wilkinson, C. B. Wright, and R. M. Wylie.

Central West Virginia—A. B. Bowyer, Elkview; Eugene S. Brown, Summersville; L. W. Deeds, Buckhannon; John E. Echols, W. E. Echols, John N. Marquis, James McClung, Wm. Nelson, Richwood; W. E. McIlvain, Moundsville, and M. T. Morrison, Sutton.

Doddridge—R. S. White, West Union.

Eastern Panhandle—A. W. Armentrout, Wm. L. Haltom, G. O. Martin, M. H. Porterfield, Martinsburg; G. P. Morison, Charles Town; Halvard Wanger, Shepherdstown.

FAYETTE COUNTY

Fayette—W. P. Bittinger, Summerlee; D. L. Butterfield, Milburn; N. L. Cardey, Winona; Guy Daugherty, Fayetteville; L. A. Dickerson, Charleston; Charles H. Engelfried, Claude Frazier, Ralph Hogshead, R. H. Jones, T. Kerr Laird, M. W. McGehee, H. H. Ritter, C. W. Stallard, Edwin B. Thompson, Montgomery; George Fordham, Powellton; L. I. Hoke, Nitro; M. G. Hresan, Minden; Norman G. Patterson, McKendree; P. E. Prillaman, Scarbro.

Greenbrier Valley—Edda von Bose, J. M. Brown, C. F. Mahood, Alderson; George M. Caldwell, Guy Hinsdale, H. L. Kirkpatrick, Stephen Mamick, W. E. Myles, White Sulphur Springs; R. C. Cecil, Rainelle; J. N. Compton, H. L. Goodman, H. D. Gunning, A. G. Lanham, Ronceverte; Herbert Duncan, A. D. Ferrell, C. W. Lemon, D. C. Preston, Lewisburg; J. G. Leech, Lee B. Todd, Quinwood; T. G. Matney, Peterstown; John F. Morris, Holden; N. R. Price, Marlinton.

Hancock—Hunter Boggs, Chester; Arthur E. McClue, Charleston; Eugene R. McNinch, Weirton.

Harrison—(The address is Clarksburg unless otherwise indicated.) B. S. Brake, J. R. Carder, George F. Evans, Thomas V. Gocke, Wm. T. Gocke, H. H. Golz, S. S. Hall, H. H. Haynes, T. M. Hood, R. T. Humphries, John C. Kerr, Frank V. Langfitt, J. F. Lembright, L. E. Neal, C. O. Post, James G. Ralston, C. N. Slater, Leon O. Spencer, Shinnston; Harry V. Thomas, Andrew J. Weaver, Jesse F. Williams, B. W. Wilkinson, J. E. Wilson.

KANAWHA COUNTY

Kanawha—(The address is Charleston unless otherwise indicated.) Randolph L. Anderson, A. E. Amick, H. W. Angell, Hugh Bailey, J. B. Banks, T. M. Barber, H. M. Beddow, S. L. Bivens, W. P. Black, Thomas Blake, O. H. Bobbitt, M. L. Bonar, Bert Bradford, Jr., John P. Brick, Henry M. Brown, Robert K. Buford, John E. Cannaday, G. B. Capito, F. A. Clark, W. L. Cooke, R. O. Dawson, R. H. Dunn, South Charleston; James W. Frazier, Henry R. Glass, James L. Hager, John B. Haley, Peter A. Haley, R. O. Halloran, George P. Heffner, Belle; E. B. Henson, W. E. Hoffman, V. E. Holcombe, Harold H. Howell, Madison; A. P. Hudgins, R. A. Ireland, G. G. Irwin, E. V. Jordan, Russel Kessel, H. D. Law, C. B. Marshall, Nitro; M. I. Mendeloff, Thomas W. Nale, N. H. Newhouse, W. W. Point, B. H. Pollock, A. M. Price, Robert B. Price, Thomas G. Reed, Franklin H. Reeder, Paul H. Revercomb, J. U. Rohr, Earle L. Shamblen, A. A. Shawkey, W. F. Shirkey, Claude B. Smith, S. B. Souleyret, East Bank; L. N. Strickland, Widen; H. A. Swart,, B. H. Swint, W. A. Thornhill, Jr., Pat A. Tuckwiller, Edwin O. Vaughan, St. Albans; R. H. Walker, A. A. Wilson, Wirt B. Wilson, J. P. Lilly.

Lewis—S. H. Burton, J. E. Offner, Theresa O. Snaith, George Snyder, Weston.

Logan—Fred E. Brammer, Dehue; W. E. Brewer, J. W. Carney L. E. Steele, Logan; U. C. Lovejoy, Omar; W. H. Parker, Braeholm; J. L. Patterson, Holden; E. H. Starcher, Earling.

Marion—(The address is Fairmont unless otherwise indicated.) J. L. Blanton, James B. Clinton, C. L. Holland, Eugene Holland, J. P. Helmick, C. O. Henry, Philip Johnson, C. L. Kinney, Ida May; Earl R. Kinney, L. R. Lambert, E. K. Munn, L. D. Norris, C. L. Parks, J. M. Trach, G. H. Traugh, J. R. Tuckwiller, E. Vacheresse, Jr., C. W. Waddell, Clyde E. Watson, Jordan; Wm. A. Welton, Emery D. Wise, Joe Yost.

Marshall—Harold B. Ashworth, J. C. Peck, Moundsville; W. C. Boggs, Cameron.

McDowell—J. Howard Anderson, Hemphill; Charles B. Chapman, Edmund O. Gates, C. F. Johnston, Peter G. Kroll, J. O. Warren, Welch; George P. Evans, Iaeger; C. R. Hughes, Eckman; Thornton Kell, Caretta; R. V. Shanklin, Gary; H. P. Evans, M. W. Smith, Keystone.

Mercer—(The address is Bluefield unless otherwise indicated.) Ben W. Bird, Jr., E. L. Gage, Frank J. Holroyd, Fred F. Holroyd, J. I. Markell, L. J. Pace, G. L. Todd, J. R. Vermillion, Princeton; B. S. Clements, Matoaka; S. G. Davidson, Henry C. Davis, J. Francke Fox, Linus W. Hewit, Albert H. Hoge, E. W. Horton, O. G. King, John McGuire, C. J. Reynolds, R. O. Rogers, Charles T. St. Clair, C. T. St. Clair, Jr., W. H. St. Clair, W. H. St. Clair, Jr., C. M. Scott, James R. Shanklin, Harry G. Steele, T. E. Vass, Karl E. Weier, Henry J. Wiser.

Mingo—(The address is Williamson unless otherwise indicated.) G. T. Conley, H. C. Hays, O. P. Hodge, Matewan; John C. Lawson.

Monongalia—(The address is Morgantown unless otherwise indicated.) Carl Johnson, G. R. Maxwell, W. C. Moser, J. C. Pickett, R. R. Summers, James Thompson, John H. Trotter, E. J. Van Liere, F. R. Whittlesey.

OHIO COUNTY

Ohio—(The address is Wheeling unless otherwise indicated.) E. S. Bippus, R. C. Bond, J. R. Caldwell, C. H. Clovis, Ivan Fawcett, R. D. Gill, N. L. Haislip, Harold G. Little, Wm. McCuskey, E. S. Phillips, H. T. Phillips, J. W. Ruckman, West Liberty; W. P. Sammons, W. M. Sheppe, H. A. Smith, J. K. Stewart, G. L. Vieweg, Jr.

Parkersburg Academy of Medicine—(The address is Parkersburg unless otherwise indicated.) Ralph H. Boice, A. M. Dearman, M. A. Gilmore, W. R. Goff, Thomas L. Harris, E. C. Hartman, Geo. D. Jeffers, Archbold M. Jones, W. J. Judy, A. R. Lutz, Roy Ben Miller, R. C. Newman, Spencer; B. B. Nicholson, Paul C. Starkey, Ravenswood; Wm. D. Tillson, K. L. Van Horn, James L. Wade, Ray H. Wharton, S. D. H. Wise, A. C. Woofter.

Potomac Valley—V. L. Dyer, Glenn Moomau, Petersburg; R. W. Love, Moorefield; H. W. Rollings, Jr., Wardensville; R. R. Sisson, Kitzmiller, Md.

Preston—A. V. Cadden, David Salkin, Hopemont; Blanche B. Miller, Harold C. Miller, Eglon; Charles E. Smith, Terra Alta.

Raleigh—(The address is Beckley unless otherwise indicated.) D. C. Ashton, L. R. Ayers, M. C. Banks, Raleigh; A. G. Bowles, Glen White; T. R. Coleman, Eastgulf; W. C. Covey, Ross P. Daniel, E. N. DuPuy, S. A. Ford, Edwight; L. M. Halloran, L. G. Houser, K. M. Jarrell, Clark Kessel, Henrietta L. Marquis, K. M. McPherson, M. M. Ralsten, Wm. T. Ruark, D. M. Ryan, Hinton; H. A. Shaffer, L. E. Shrewsbury, J. M. Teter, Beaver; A. U. Tieche, E. B. Wray, Stotesbury; F. L. Banks.

Summers—J. Charlton Bigony, Hinton.

Taylor—Paul P. Warden, Grafton.

Wetzel—E. C. Blum, T. B. Gordon, J. O. Theiss, New Martinsville; L. Phelps Stanley, Pine Grove.

Wyoming—Frank H. Penn and Ward Wylie, Mullens.

VISITORS

Medical visitors—Irvin Abell, Louisville, Ky.; Walter C. Alvarez, Rochester, Minn.; R. C. Arnold, Stapleton, N. Y.; Wm. C. Barger, New York City; B. T. Beasley, Atlanta, Ga.; Geo. E. Bennett, Baltimore, Md.; Wesley C. Bowers, New York City; Karl M. Bowman, New York City; B. L. Brannon, Norfolk, Va.; Murray C. Brown, Logan; W. W. Davis, Beckley; James L. Duffy, New York City; A. I. Folsom, Dallas, Texas; Julius Friedenwald, Baltimore, Md.; Edward G. Goldcamp, Youngstown, Ohio; Ross Golden, New York City; W. Armistead Jarrett, New York City; Frederick C. Irving, Boston, Mass.; Wm. B. Morrison, Columbus, Ohio; C. G. Perin, Jr., Cincinnati, Ohio; C. M. Peterson, Chicago, Ill.; C. E. Roderick, Bluefield; E. T. Roetman, Charleston; Leon S. Saler, Charleston; B. L. Smith, Columbus, Ohio; E. W. Squire, Charleston; Harvey B. Stone, Baltimore, Md.; Edward P. Turner, Huntington; Ralph M. Tyson, Philadelphia; C. T. Upchurch, Kopperston; Paul Dudley White, Boston, Mass.; Byrd C. Willis, Rocky Mountain, N. C.; R. C. Hood, Washington, D. C.

Non-medical Visitors—Miss Katherine Cox, Charleston; John R. Davis, Weston; Jack T. Gocke, Clarksburg; James W. Harris, Jr., Charleston; Pat Haynes, Clarksburg; Governor Homer A. Holt, Charleston; C. P. Loranz, Birmingham, Alabama.

County Society News

Boone County

The Boone County Medical Society, met on June 27, 1940 in the beautiful mansion of Dr. and Mrs. W. F. Harless in Madison. The meeting was called to order by Dr. Ray I. Frame, president, who was elected with Dr. W. V. Wilkerson, of Prenter, as delegate to the state convention in White Sulphur Springs. Dr. Clarence E. Lewis of Nellis, and Dr. H. H. Howell of Madison, were elected as alternates.

The society went on record as being ready and willing to serve their country in any capacity deemed necessary by our government, in any act of theirs to protect America for Americans.

The guest speakers were Dr. H. H. Ritter and Dr. Baum of Montgomery. Dr. Ritter gave an excellent paper on "The Diagnosis and Management of the Unusual Presentations During Labor." This was followed by a general roundtable discussion of the subject, with all doctors participating.

Dr. Baum gave an extended lecture on the subject of "Hematology as It Applies to the General Practitioner", which was very good and very profitable to the doctor in the field. Again a roundtable discussion ensued, being led by the venerable Dr. D. F. Pauley, who is loved and respected by all who know him.

Those present were Drs. Ritter and Baum, Montgomery; Gearhart, Van; Lewis, Nellis; Wilkerson, Prenter; Pauley, Jeffry; Howell, Madison; Harless, Madison; Frame, Sharples, and Hunter, Whitesville.

After a most wonderful dinner, with Mrs. Harless acting as hostess, the ladies enjoyed a game of bridge. The next meeting was at the home of Dr. and Mrs. Lewis of Nellis, at the usual meeting hour on Thursday, August 3, 1940. The following meeting on September 20 will be at the home of Dr. and Mrs. D. F. Pauley, who promise nothing elaborate, but the best feed the Boone county doctors ever had fresh from the garden.

R. L. HUNTER, *Secretary.*

Cabell County

A "Symposium on Syphilis" featured the August 8 meeting of the Cabell County Medical Society which was held at the Governor Cabell Hotel, Huntington. The essayists for the symposium were Drs. Ray M. Bobbitt, Boyd F. Brown and Edward F. Reaser.

No regular scientific meeting was held in July. However, the society sponsored a handicap golf tournament for the doctors, dentists and lawyers at the Guyan Country Club on July 18, followed by a dinner for the members of the three professions. The arrangements were in charge of Dr. James S. Klumpp, chairman of the entertainment committee.

Dr. Klumpp and Dr. Oscar B. Biern have been ordered to active duty in the navy to serve on recruiting duty in the Huntington area.

J. L. HUTCHINSON, *Secretary.*

Central West Virginia

The regular quarterly meeting of the Central West Virginia Medical Society was held at Webster Springs on the evening of August 21 with 38 physicians and guests in attendance. Dinner was served at the Methodist Episcopal church prior to the opening of the scientific session.

The program was presented by Dr. Martin L. Bonar and Dr. P. A. Tuckwiller, both of Charleston. Dr. Bonar discussed "Skin Manifestations of Internal Disorders." Dr. Tuckwiller spoke on "The Anxiety Tension State." Both presentations were discussed by the members in attendance.

A. B. BOWYER, *Secretary.*

Fayette County

Dr. Warren T. Vaughan of Richmond, Virginia, was the principal speaker at the June 25 meeting of the Fayette County Medical Society which was held at the courthouse in Fayetteville. He gave a highly interesting paper on allergy which was discussed by Dr. J. F. VanPelt, Oak Hill, and Dr. Harold Jones and Dr. Melvin McGehee, Montgomery. There was a large attendance with a number of visitors from other counties.

Following the scientific program, refreshments were served by the ladies of the Fayetteville Presbyterian church.

The September meeting of the society will be held at the White Oak Country Club at Oak Hill. Invitations will be extended to the members of the Kanawha and Raleigh societies on this occasion.

GILBERT A. DANIEL, *Secretary.*

Mercer County

The regular monthly meeting of the Mercer County Medical Society was held in the Appalachian Building in Bluefield on June 20, 1940. The guest speakers were Dr. Henry E. Baum and Dr. W. W. Point, both of Charleston. Dr. Baum's subject was "Trends in American Obstetrics in the Last Decade." Dr. Point spoke on "The Care of the Normal Obstetrical Case During Pregnancy and Delivery." Both papers were of practical interest and were well received.

FRANK J. HOLROYD, *Secretary*.

TWENTY-FIVE YEARS AGO

(From the August, 1915, West Virginia Medical Journal)

August articles in 1915 were contributed by Dr. L. D. Wilson, Wheeling; Dr. William M. Beach, Pittsburgh; Dr. H. Frank Stiltner, Wyoming county health officer, and a highly convincing paper on "The Fallacy of State Paternalism," by Dr. C. O. Henry of Fairmont.

* * * *

Dr. John E. Cannaday, Charleston, reported on the fortieth annual meeting of the American Gynecological Society.

* * * *

The Mercer County Medical Society met in Bluefield, raised the dues to $6 per annum, and voted that the society should pay the expense of the annual banquet. The program committee consisted of Drs. Fox, Byrd, Hoge and Wallingford. Dr. Steele, secretary, reported adjournment to the Busy Bee restaurant.

* * * *

The Barbour-Randolph-Tucker Society met at Thomas and passed two resolutions against unethical advertising by physicians. Talks were made by Dr. O. H. Hoffman and Dr. O. L. Perry. Dr. N. R. Davis of Henry and Dr. R. K. Sill of Benbush were admitted to membership. Dr. J. C. Irons, secretary, reported that the members present were guests of Dr. Hoffman and Dr. J. L. Miller at an excellent lunch.

Date Set for 1941 A. M. A. Session

The Board of Trustees of the American Medical Association has selected June 2-6, 1941, as the date for the Ninety-second Annual Session of the Association to be held at Cleveland, *The Journal* of the Association announces in its August 24 issue.

General News

Dr. Robertson Appointed

Dr. Grover C. Robertson of Charleston, for the past several years a member of the Kanawha Medical Society's Advisory Committee to the Department of Public Assistance, has been appointed on the State Association's D.P.A. Advisory Committee to fill the vacancy caused by the death of the late Dr. John W. Moore. Dr. Robertson has had close contact with indigent medical relief work for the past several years and is well qualified for the position.

The other two members of the state committee are Dr. B. H. Swint, Charleston, chairman, and Dr. Thomas H. Blake, St. Albans.

Kanawha Health Officer

Dr. Edward Ross Davies of Ellicott City, Maryland, has been engaged as Kanawha county health officer and will take over his new duties on September 15. Dr. Davies succeeds Dr. T. E. Cato, who resigned several months ago to become health officer in Dade County, Florida.

Dr. Davies is 46 years of age and a graduate of the Dalhousie University Faculty of Medicine, Halifax, Nova Scotia. Dr. Davies was formerly connected with the American Red Cross and with the Rockefeller Foundation. He also served at one time as health officer of Preston County, West Virginia.

Golden Clinic Program

The sixth annual scientific program presented by the Golden Clinic, Davis Memorial Hospital, was held at Elkins on Saturday, August 31, with an excellent turnout of West Virginia physicians. The program was presented in the auditorium of the Katherine Elkins Hitt Memorial Hall for Nurses at the hospital.

Guest speakers at the annual clinic day were Dr. Paul Padget, Associate in Medicine, Johns Hopkins, Baltimore; Dr. Thomas L. Doyle, Associate Professor of Surgery, Hahnemann Medical School, Philadelphia; Dr. Maxwell M. Wintrobe, Associate Medicine, Johns Hopkins Hospital, Baltimore; Dr. S. D. Blackford, Assistant Professor of Medicine, University of Virginia, Charlottesville; Dr. Frederick M. Douglass, Director of Surgery, St. Vincent's Hospital, Toledo, and Dr. Desiderio Roman,

Professor of Clinical Surgery, Hahnemann Hospital, Philadelphia.

The scientific program consisted of papers and lectures on "Cardiovascular Syphilis", by Dr. Padget; "Congenital Deformities of the New Born", by Dr. Doyle; "Classification and Treatment of Anemia", by Dr. Wintrobe; "Peptic Ulcer and Gall-Bladder Disease", by Dr. Blackford; "Surgery of the Biliary Tract", by Dr. Douglass, and "Cancer Philosophy", by Dr. Roman.

During the noon recess there was a luncheon meeting of the West Virginia Heart Association with Dr. P. A. Tuckwiller, Charleston, president, presiding. There was also a luncheon for the visiting ladies at the Elkins Country Club, through the courtesy of the wives of the Golden Clinic staff.

The sessions closed with the annual clinic dinner at the Presbyterian church in Elkins. Dr. T. L. Harris, Parkersburg, served as toastmaster and Dr. Roman made his talk on "Cancer Philosophy." Other speakers included Dr. Frank V. Langfitt, Clarksburg, president of the West Virginia State Medical Association, and Dr. Robert King Buford, Charleston, president-elect.

Obituaries

Fred P. Weltner, M. D.

Dr. Fred Paul Weltner, prominent Kanawha county eye, ear, nose and throat specialist, died suddenly at his home in Charleston, August 15 at the age of 51 years. Death was attributed to a heart attack. Although Dr. Weltner had not been in good health for several years, he continued in active practice. On the day following his death, the Association headquarters received his request for one of the medical mobilization questionnaires so that he could volunteer his services to his country in the event of war.

Dr. Weltner was a native of Preston county where he was born in 1889. In 1915 he graduated from the College of Physicians and Surgeons of Baltimore and received his West Virginia license the same year. After serving with overseas troops during the World War, Dr. Weltner located in Charleston and practiced there for 20 years. Surviving are his mother, one sister and one brother. Dr. Weltner was buried in the family plot at Brandonville, Preston county.

Woman's Auxiliary

Lewis Auxiliary Formed

Woman's Auxiliary to the Lewis County Medical Society was formed on April 8, 1940, with the election of the following officers: Mrs. C. R. Davisson, president; Mrs. A. F. Lawson, president-elect; Mrs. H. M. Andrew, vice president, and Mrs. R. M. Fisher, secretary-treasurer.

Charter members of the new Auxiliary are Mrs. Andrew, Mrs. H. R. Coleman, Mrs. M. D. Cure, Mrs. Davisson, Mrs. Fisher, Mrs. O. L. Hudkins, Mrs. W. P. King, Mrs. Lawson, Mrs. J. E. Offner, Mrs. C. M. Snaith, Mrs. George Snyder and Mrs. E. A. Trinkle.

Committees appointed by Mrs. Davisson included exhibits, Mrs. Cure and Mrs. Hudkins; *Hygeia*, Mrs. Trinkle; public relations, Mrs. Lawson and Mrs. Snaith; historian and publicity, Mrs. Fisher; social, Mrs. Offner and Mrs. Snyder; telephone, Mrs. Coleman; program, Mrs. Andrew.

MRS. RALPH M. FISHER, *Secretary*.

High Blood Pressure

Patients with high blood pressure should be studied with regard to the effect of posture on the hypertension and those in whom the pressure falls markedly when confined strictly to the recumbent posture should have their urinary tracts studied by x-ray, and if nephroptosis (downward displacement of the kidney) is found some supportive measure for the latter should be instituted, William S. McCann, M.D., Rochester, N. Y., declares in *The Journal of the American Medical Association* for August 24 in a paper prepared in collaboration with Monroe J. Romansky, M.D., also of Rochester.

The author says that such a study of the effect of posture on blood pressure should be made by comparing the pressure when standing upright with that found when lying flat.

By supporting the kidneys by such measures as corseting, the blood pressure may be lowered and stabilized and many of the symptoms which accompany the hypertension may thus be relieved. It is pointed out, however, that "nephroptosis does not always result in hypertension."

BOOK REVIEW

Chemical Warfare

"The Medical Aspects of Chemical Warfare," by Lieutenant Colonel Edward B. Vedder, M.C., U.S.A., with a chapter on the "Naval Medical Aspects of Chemical Warfare," by Lieutenant Commander Duncan C. Walton, M.C., U.S.N. Published by Williams and Wilkins Co., Baltimore, 1925, 327 pages, including subject index.

The medical aspects of chemical warfare are presented in such a manner as will immediately hold the active interest of the reader. In the preface, Colonel Vedder sets forth the desirability of having some source of reference for medical officers, whether on the active list or in reserve. The difficulty of providing intensive specific training for all medical officers is indicated. The author has attempted to gather together in the space possible, the information that medical officers ought to have on this important subject. In this, his accomplishment has been unusually successful. As a whole, the book is attractively written, the style is suitable either for intensive study or that of more rapid informative reading. Although published in 1925, this book still is the authoritative reference on the medical aspects of chemical warfare. It should be a matter of required reading for all medical officers of either the Army or the Navy. Whether ashore or afloat, the medical officer may suddenly be called upon to act as an expert adviser in regard to some of the problems arising in connection with the use of chemicals in warfare. The author has presented the important and pertinent information in this regard.

HUMANITY OF WEAPONS

In the introduction, the relative humanity of various weapons of warfare is discussed and statistics are presented which make gas as a weapon appear to be more humane than other forms of weapons. There is a brief discussion of the efficiency of gas as compared with other weapons. Figures taken from the Report of the Surgeon General of the United States Army for 1920 show that of those gassed, 8.26 per cent died; while of those wounded by gunshot missles, only 1.73 per cent died. Out of a total of 224,089 American casualties, 70,552 or 31.49 per cent were due to gas.

While there is no lengthy discussion of tactical uses or of the specific merits or limitations of gas as a weapon, there is an interesting presentation of many of the succinct facts and impressions relating thereto.

The history of chemical warfare is briefly outlined with a description of the agents first in use and the various methods in which they were used. There is a discussion of the attempts to restrict chemical warfare by international agreements and treaties, and a resumé of the organization of the chemical warfare in the United States Army.

The entire introduction serves as an excellent background from which to proceed to the technical basis of the problem of the medical aspects of chemical warfare. A brief presentation of physics and chemistry as it relates to chemical agents is presented. Only that really essential to the proper understanding of chemical warfare agents by the medical officer is given. The chapter on meteorology provides a splendid introduction into the information needed relative to an understanding of the influences of weather conditions upon chemical warfare agents and their use. This is followed by a brief discussion of the characteristics of smoke and gas clouds, with an excellent presentation of the physical characteristics and the essential differences.

The chemical warfare agents are classified in the conventional manner. First, according to tactical use, and second, according to their physiological effects.

PULMONARY IRRITANTS

As pulmonary irritants, chlorine, phosgene and chlorpicrin are considered in detail. A description of the properties of each agent is accompanied by relevant statements in regard to the particular value of each as a chemical warfare agent. This is then followed by a discussion of the symptoms of poisoning. A description of the pathologic observations is given, and then a discussion of physiologic and toxicologic information essential to an understanding of the various types of phenomena which occur within the body of the individual coming under the influence of these three pulmonary irritants. First aid treatment is discussed, followed by a consideration of the relationship of venesection to the prevention and treatment of pulmonary edema which is such an important sequela of such poisoning.

The vesicants, mustard and Lewisite, are discussed at great length. Their various physical, chemical and toxicologic properties are discussed in a masterful fashion. Theories explaining the action of mustard are presented, and the view expressed

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that the dichlorethyl sulphide molecule is in its own right both a cell irritant and a cell poison. The pathologic changes observed as a result of vapor and liquid burns are described and the effects upon different tissues and different organ systems described. The susceptibility of tissues injured by mustard is emphasized, the secondary infections of the respiratory mucus membranes and of the skin contributing an important complicating factor. Prophylaxis and the matter of individual sensitivity is discussed, and the test for determining the sensitivity of various individuals described. The use of protective ointments and the essential aspects of first aid treatments are discussed. The subsequent management of the patient with a mustard poisoning is considered in detail.

MANAGEMENT OF CONVALESCENTS

The reviewer cannot refrain from quoting one section on the management of the convalescent which was taken by the author from the Official History of the War, Medical Services, Diseases of the War, volume II, page 458, 1923, London. "The management of the convalescent period, provides the great test for the medical officer's ability because he is required not only to treat the disease, but to restore morale, to cut short hospitalization, and to lift men out of the slough of self-analysis which so often follows gassing. The best results are, therefore, being obtained by placing gassed cases in selected hospitals under the care of medical officers with special aptitude for this.

"As soon as a man is convalescent and free from the dangers of septic complications, he should be discharged from the hospital to a convalescent center where a well ordered routine of exercise, employment, amusement, and rest will equally restore him to a state of physical and mental fitness."

Lewisite is described and its relevant characteristics presented. The pathology and treatment are presented, with its advantages and disadvantages.

The lachrymatory agents, chloracetophenone and brombenzylcyanide are discussed, their harassing effect described and their lack of significant toxicologic effects on human beings emphasized.

The irritant smokes, diphenylchlorarsine, and diphenylaminechlorarsine are described as to general physical and chemical properties, and the physiologic and toxicologic effects of these agents presented. The author states that it is highly improbable that death will be caused by use of these materials under field conditions. He points out, however, that temporary disability may be produced under field conditions. This is of interest because the Germans had the same experience in this respect as did our own forces. In a small percentage of cases, immediate symptoms ascribed to toxemia effecting the nervous system were followed after an interval of several days by marked sensory disturbances. Anesthesia varying from mere numbness of the finger tip to a complete loss of sensation over a considerable part of one or more limbs was occasionally observed. This was generally bilateral and symmetrical. Recovery from this condition was rapid and uniform. That there must be an important matter of individual sensitivity is intimated by the author's statement that such cases were quite exceptional and that patients gassed by blue cross shell (diphenylchlorarsine, etc.) during the war were incapacitated only for a few hours. Since the symptoms of these irritants are mainly violent irritations of the nose and throat, immediately upon exposure recognition of the agent and diagnosis of the significance of the symptoms is easy. The author points out that the lachrymators have little effect other than an immediate irritation on the mucus membranes of the nose and throat, while after exposure to practically all of the other gases there is a definite latent period before the development of symptoms. He calls attention to the fact that the enemy may use other gases together with arsenical irritants, and emphasizes the fact that the possibility of other symptoms developing later must always be borne in mind. The use of pulmonary irritants is most to be feared at such times. The simple treatment is described, and a caution added that no water from shell holes or other sources open to contamination by gas or other agents be used. The reason for this is the great toxicity of the arsenic contaminated water.

MISCELLANEOUS GASES

There is a chapter on miscellaneous gases. Hydrocyanide which was used ineffectively by the French under the name Vinconnite is described. The author points out that while it is impossible to obtain a lethal concentration under field conditions when firing it in small shells, yet it deserves study because it has been used and may be used again under different circumstances. Its characteristics and physiologic actions are presented.

Carbon monoxide is discussed and its importance stressed because of the fact that practically all explosives produce enormous quantities of carbon

monoxide, and during the past war many men were overcome by carbon monoxide. Problems of the medical aspects of monoxide poisoning are discussed and attention called to the fact that the gas mask does not afford protection against carbon monoxide, since the cannister is designed only to protect against war gases. Necessity for the use of oxygen helmets in such cases is pointed out.

Arsine, nitrous fumes and oxone are discussed. Then follow brief discussions on screening smokes, incendiaries and thermite. Mention is made of the value of the screening effect of phosphorus pentoxide produced by the burning of white phosphorus. The author states that these phosphorus smokes are non-toxic, but that at the same time they should be viewed with suspicion since the enemy may use this non-toxic smoke screen in order to conceal a really serious gas attack.

In the author's discussion on incendiaries, he describes phosphorous as a poor incendiary. He describes the effect of the scattering of lumps of burning phosphorous over large areas, both as to its terrifying effect on personnel, and as to the possibility of giving rise to serious burns on individuals. Phosphorous even when imbedded in the flesh will continue to burn so long as air can reach it. First aid treatment is discussed.

Thermite as an incendiary agent is discussed and the statement made that burns produced by this or any other incendiary materials are to be treated as other heat burns.

One chapter is given to a discussion of individual protection. The army gas mask with its use in drill and field is well covered. (Improvements in this respect subsequent to 1925 are to be found in service literature).

In the chapter on collective protection is described the organization of gas defense, the methods for foretelling the probable use of gas, methods for spreading the gas alarm, specific methods of defense, care of supplies, and the drafting of instructions for defense against gas.

There is a chapter devoted to the field organization of the medical department of the army in relation to the treatment and transportation for gas cases.

Of interest both to the civilian and to the soldier alike is information supplied in the chapters on the ultimate results of gas poisoning. Time does not permit summarizing here the important evidences

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accumulated which effectively contradict the popular conception that chemical warfare agents leave horrible disabling results or even that they predispose to such conditions as tuberculosis. So important is this, however, that this brief conclusion is quoted from page 250:

"1. That only a very minute percentage have suffered from any permanent disability directly caused by gas.

"2. There is not the slightest evidence that gassing has increased the liability to tuberculosis. So far as the evidence goes, men who have been gassed suffered less from tuberculosis than normal individuals under the same circumstances.

"3. That neurasthenic conditions are responsible for a considerable part of the disability alleged to result from gassing.

"4. That few of the cases that received a pension will ever admit a subsequent improvement or cure."

It is further stated that it has been shown by animal experimentation that very few individuals have any pathologic basis for symptoms more than a year after even the most severe gassing with phosgene.

Of particular interest to the medical officer of the navy, will be the chapter on the Naval Medical Aspects of Chemical Warfare written by Lieutenant Commander Duncan C. Walton, M.C., U.S.N. (1925). In spite of its brevity, it is an effective and attractively arranged presentation of the important fundamental relationships between the problems of chemical agents as encountered in the army, and the problems of chemical agents as encountered in the navy. Describing how these agents will probably be used in naval practice, by what means and under what conditions, the author discusses each group of agents according to the classification based on physiologic effects. Then in sequence, he takes up the naval aspects of individual defense, including a discussion of the special navy type masks, protective clothing and an introduction to the matter of collective defense. In addition to discussing the important war gases, the author discusses the dangers to be encountered from other toxic gases which have a particular importance in naval practice. They are ammonia, hydrogen cyanide, cyanogen chloride, formaldehyde, nitrous fumes, fire extinguisher fumes, sulphur dioxide, hydrogen sulphide, chlorine, carbon monoxide, phosphine, gasoline fumes, arsine and lack of oxygen. The naval medical officer has long had to

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have a working knowledge of most of these special hazards so they are not discussed in great detail. However, there is an excellent brief resumé of the prevention, recognition and treatment of these special chemical hazards, and attention is directed to the fact that the regular army and navy gas mask does not protect against any of these special gases, and that in their stead oxygen helmets and special masks must be used.

The bibliographic references are complete and include all of the important contributions of related interest up to the time of publication in 1935.

Finally, there is added a valuable appendix with conversion formulas for toxicity data. It is so arranged as to render it of great value, not only in actual investigative practice, but as well in the solution of field gas problems in which the medical officer may be requested to advise.

This book is beyond question the outstanding authoritative reference work on the medical aspects of chemical warfare by an American author. Although it will be of interest to others than physicians, it should very definitely be a part of the library of every army and naval medical officer, whether he be on the active list or in the reserve.

—G. M. L.

Synopsis of Obstetrics

"Synopsis of Obstetrics", by Jennings C. Litzenberg, Professor Emeritus of Obstetrics and Gynecology, University of Minnesota Medical School. Three hundred and seventy-six pages.

This little volume accomplishes what the author has hoped for it, *viz.*, "to minimize the irrelevant; to evaluate the questionable; to emphasize the important, and at the same time to maintain that balance between minimum and maximum stress so necessary to develop sound judgment."

The material follows the standard text-book pattern, but is of necessity presented principally in outline form. In spite of its limitations the book remains quite readable. The illustrations are clear and well selected.

This synopsis should prove especially useful to students as a review source for final and state board examinations.

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Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Hermann Brehmer who, in 1859, founded the first tuberculosis sanatorium, believed that carefully graded exercise, alternating with rest periods, was the important element in the treatment of pulmonary tuberculosis. One of his patients, the physician Peter Dettweiler, observed in his own case that symptoms were aggravated by exercise and subsided with rest. His disagreement with Brehmer led him to establish his own sanatorium in which rest was regarded as the cardinal need of the patient. The test of time has substantiated Dettweiler's views that rest, supplemented by good nutrition and fresh air is the essential element of the cure. Meantime, the rôle of exercise in the treatment of tuberculosis has almost been forgotten—for which reason a current article on exercise by an alert sanatorium physician is timely. Abstracts of the article follow.

Exercise in Tuberculosis

There is still a wide divergence of opinion among tuberculosis physicians concerning exercise in the treatment of tuberculosis. Aside from the judgment of the physician, the time to start exercise and the amount to be taken are dictated by the physical makeup of the sanatorium and by the size of the nursing staff.

Tuberculosis specialists differ in their views as

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to what constitutes exercise. Those who believe in strict bed rest will consider every activity of the patient short of resting quietly in bed as exercise. Sitting up in bed, writing letters, drawing, knitting and so on are exercise by that standard. Others hold that only such activities carried on after the patient is clothed and ready for outdoor walks, merit the term exercise. The majority steer a middle course between those two extreme views.

Patients do not react alike to the same amount of exercise; mild exercise for one patient may be strenuous exercise for another even though the patients have a comparable disease. In general, any activity which produces severe fatigue should be halted, for fatigue is a symptom of overstrain.

Exercise should be prescribed and graduated according to the individual need of the patient. Malaise, fever, rapid pulse and marked fatigue are constitutional symptoms indicating a toxic systemic reaction, and any patient with these symptoms should be in bed. Regardless of the x-ray, the sedimentation rate or the sputum contents, constitutional symptoms must be treated by strict bed rest. To treat every patient regardless of symptoms, or lack of symptoms, with strict bed rest is extreme.

Apparently comparable cases of tuberculosis, which have practically the same amount of disease by x-ray, seldom have the same symptoms to the same degree. One must distinguish between local and constitutional symptoms in tuberculosis just as one must distinguish between local and constitutional symptoms if one treats a boil. A boil produces pain, swelling, redness and local heat and can be treated as a local affair, usually. But if the patient develops malaise, fever, and loss of appetite the boil ceases to be a local affection and the constitutional symptoms demand the patient be put to bed and adequate systemic measures be used. The same holds true in tuberculosis even though many sanatoria have lost sight of such a fact. Local symptoms and constitutional symptoms have a far different meaning, and any patient with constitutional symptoms should be on fairly strict bed rest until all constitutional signs and symptoms subside and the disease becomes stabilized. After that he may be allowed a graduated amount of exercise if other signs are favorable.

Patients with minimal disease and positive sputum

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whether they have cough or not should be in bed also. There are a few patients who raise positive sputum without coughing. They believe that the sputum raised is not sputum in the true sense unless they cough it up and many must be coached in order to produce a specimen of sputum for examination without undergoing gastric lavage. Exercise in such patients should not be permitted until a sufficient period of bed rest or a collapse measure in addition to bed rest has converted the sputum and given the disease time to become stabilized.

No patient with active tuberculosis regardless of the stage of the disease or the presence or absence of symptoms should be allowed to indulge in any activity to the point of fatigue.

In most sanatoria the amount of exercise is regulated but when the patient leaves exercise cannot well be controlled. Especially in those instances where the economic status requires the patient to work, a rehabilitation program covering a period of months is absolutely necessary. Arrested tuberculosis is not healed nor cured tuberculosis, yet patients are discharged from sanatoria as arrested cases whose only alternative is to go to work in order to support themselves. The greatest necessity

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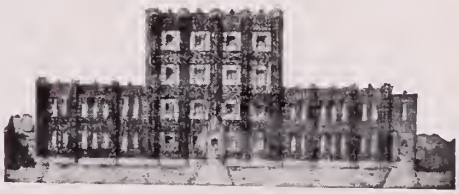

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in the field of tuberculosis at the present time is a rehabilitation program.

A few chest specialists allow their patients an amount of exercise almost equivalent to the regimen of one on vacation. Such physicians seem to feel that the mental state of the patient is so important in the healing of tuberculosis that a great deal of activity is justifiable in order to keep the patient from becoming introspective. The relationship between a patient's immunological reaction to disease and his introspectiveness has never been proved and has no factual basis. Rest will heal tuberculosis. A healthy mental outlook without physical rest is not sufficient for the healing of tuberculosis.

Another theory of the exercise extremists is a fatalistic one which also calls on biological immunity and resistance for support but here again the facts do not support the theory. The extremists justify the exercise in the mistaken belief that a patient with average resistance will heal his tuberculosis even on exercise while no amount of bed rest will cure a patient who does not have average resistance. The idea is truly fatalistic. Conservatism in exercise is necessary for a favorable result in the majority of cases of tuberculosis. Rest is the greatest single factor in the healing of tuberculosis exclusive of collapse measures.

The general use of collapse measures such as pneumothorax has changed the course of the disease in thousands of cases. Too often the patient is put back on his feet immediately because of the improvement following collapse. In some clinics patients are not even put on bed rest during the pneumothorax induction period. But an immediate satisfactory collapse does not mean that the disease is healing—collapsed disease is not healed disease. Spreads do occur in well collapsed lungs, empyema frequently occurs and new disease often appears in the contralateral lung. Patients with well collapsed fresh disease should not be allowed exercise immediately no matter how well they look or feel. Collapse measures are not a substitute for bed rest. A well regulated rehabilitation program will prevent relapse in many cases.

Exercise in Tuberculosis, A Plea for Conservatism, by William J. Habeeb, M.D., Ohio State Med. Jour., Vol. 36, No. 6, June, 1940.

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ACUTE SURGICAL LESIONS OF THE ABDOMEN*

By IRVIN ABELL, M. D.
Louisville, Kentucky

THE term, acute abdomen, through common usage, represents a recognized clinical syndrome covering the many acute conditions arising within the abdomen urgently demanding surgery for their relief. Many of them present symptoms of such similarity that preoperative clinical diagnosis becomes a matter of difficulty and at times accurate distinction between them is quite impossible. The common indication in such lesions is surgical relief; this being true it is apparent that our first duty in a given case is to determine for or against its employment. The rapidity with which the disastrous changes in the abdomen develop makes it imperative that this determination be made at a time that gives the patient the greatest chance for recovery. Regarded in this light the final differential diagnosis of the cause, though of the utmost importance, must take second place if we are to diminish the mortality from the acute surgical lesions of the abdomen. To open the abdomen in a patient presenting acute symptoms and upon examination find that such was unnecessary is admittedly bad surgery and an admission of diagnostic failure; in condoning such a mistake it is submitted that the mortality rate of the group of lesions under discussion will not be lowered unless one is prepared to perform a laparotomy without waiting for a detailed diagnosis and willing to risk an unnecessary one rather than disregard the suspicious signs that may indicate the early and immediate stage of a condition convertible by delay into a disaster.

For purposes of convenience the subject will be discussed under two headings: First, the more common causes of the acute abdomen, and second, conditions simulating it. It

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Dr. Abell, graduate Louisville Medical College; Diplomate American Board of Surgery; Past President American Medical Association; Clinical Professor Surgery, University of Louisville School of Medicine.

*The Oration on Surgery delivered before the joint meeting of the Medical Associations of Virginia and West Virginia at White Sulphur Springs on July 31, 1940, and published simultaneously with the Virginia Medical Journal.

is obvious that time will not permit of a detailed discussion of all the causes and your indulgence is requested while some of these are briefly reviewed. A survey of hospital statistics reveals that appendicitis is responsible for fully fifty per cent of emergency abdominal operations. Typical cases of this disease seen early present no problem either in diagnosis or treatment. The fact that the mortality from appendicitis has shown a yearly increase from 11,000 in 1920 to more than 20,000 at the present time is conclusive evidence of the fact that patients afflicted with it do not come under observation or at least to surgical treatment at a time when its relief is comparatively a simple procedure. Several factors are responsible for this delay, the most important one being the ignorance of the laity regarding the significance of abdominal pain. Only when the public has been educated in this regard and, as well, concerning the dangers of self medication, particularly purgation, in the presence of abdominal pain, can there be hope of avoiding the problems which delay in the institution of appropriate treatment entails.

DELAYED RECOGNITION

A second factor is to be found in delayed recognition of atypical cases. With a normal embryological development the appendix comes to rest at what by common usage is designated as McBurney's point. Three variations from the normal allow the appendix a wide latitude in location, it being found in every part of the abdomen except the left upper quadrant; these are, first, a failure of rotation of the cecum, which, depending upon its degree places the organ at any point along an arc extending from the midepigastrium to the under surface of the liver and thence downward to the right iliac fossa; second, an unusually long mesocecum giving to the latter a wide circle of mobility so that the appendix may be found in the right lower quadrant, in the hypogastrium even to the left of its midline, and at any point in the pelvis; and third, the rare anomaly of transposition of the viscera in which the cecum and appendix are located in the left lower quadrant. The atypical situations of the appendix becloud the diagnosis in the event of its inflammation, one's attention quite naturally being directed to the organs normally found in the respective localities mentioned often leading to delay during which gangrene, perforation or infection by contiguity occurs. Another cause of delayed recognition is presented by the deviation in symptoms when the situation of the appendix is retrocecal, particularly when there is an absence of the mesoappendix, the organ being practically extraperitoneal; the absence of localized tenderness and rigidity may lead to delay while the sequence of pathological events in the appendix continues unchanged. The sequence of symptoms, pain, nausea, vomiting, fever and leucocytosis, should put one on guard and direct suspicion to an atypically situated appendix when such symptoms can not be definitely ascribed to an organ normally located at their point of origination. Recognition of appendicitis during infancy and childhood is not always an easy matter; the symptoms are the same but the child is not a miniature adult; it lacks cooperation, the blood count shows wide fluctuations and until about the fourth year constantly shows a relative lymphocytosis; the disease here, as in the opposite extreme of life, is prone to run a rapidly destructive course. Muscle spasm is elicited often with difficulty while tenderness can be frequently best appreciated upon rectal palpation.

GANGRENE AND PERITONITIS

When from whatever cause, delay has allowed the development of gangrene, spreading peritonitis or diffuse suppurative peritonitis to develop, problems are presented upon which there is a wide diversity of opinion. Time forbids an analysis of the arguments, results and statistics of the proponents of the immediate and the delayed operation, the type of operation and the question of drainage. The writer's practice has

been and is to regard such conditions as emergencies; not that the patient should be subjected to operation immediately upon arrival at the hospital, since peritonitis does not spread with such rapidity as to forbid restoration of fluid, chloride and glycogen balance before operation is undertaken, but that removal of a depot of necrotic, virulently infected tissue, accomplished gently without undue trauma to exposed peritoneal surfaces under spinal, ethylene or cyclopropane anesthesia, with or without drainage as the case demands, not only meets the pathological indications, but in our experience has afforded the best chance for recovery.

INTESTINAL OBSTRUCTION

Intestinal obstruction continues to cause a mortality which is a serious indictment of both diagnostic ability and surgical initiative. It is common knowledge that while acute intestinal obstruction carries an inevitable mortality, the greater proportion of it may be justly attributed to delay in recognition and to tardiness in the institution of appropriate treatment. The most important single factor is the element of time; a second one of great moment is offered by the site and character of the obstruction, whether high or low, the former pursuing a more rapidly fatal course than the latter. The precise significance of these two factors becomes apparent with a full realization of the sequence of events common to all types of acute intestinal obstruction, namely, mechanical obstruction of the intestine with stoppage of the fecal current, damage to the bowel wall with ultimate gangrene and peritonitis and an associated production of toxins often of the most virulent type. The research workers by their physiochemical studies of the body fluids have afforded much valuable aid in the appreciation of the changes in body chemistry with the indication of means to assist in the restoration of the latter, but the underlying fact, with which all adjuvants must be correlated, is that the obstruction is mechanical and must needs be corrected mechanically. The solution of the problem in the early hours when but simple obstructions are present may require nothing further; the mortality is low and the results are brilliant if the obstruction is relieved before the wall of the bowel is compromised by strangulation, volvulus or thrombosis. With the incidence of the complications dependent on strangulation and toxemia, which invariably follow the continued presence of obstruction, the relief of the latter becomes but one of the indications to be met and the risk of any operative procedure is enormously enhanced. The external obstructions in the shape of strangulated hernias present not only the classical symptoms but give visible evidence of their presence, hence offer no problem in recognition. The internal obstructions are hidden from view and are obscure to palpation; to await the onset of symptoms which afford indisputable proof of their presence in an effort to make a differential diagnosis is but to lose invaluable time in combating the approach of dissolution. The presence of abdominal pain, nausea, vomiting and constipation with an absence of fever and leucocytosis should put the burden of proof on the attendant to show that no obstruction exists. The history, particularly if previous abdominal ailments or operations are indicated, the physical examination, the presence of active peristalsis, visible or audible, with a flat röentgenogram competently interpreted with reference to fluid levels and distribution of gas, in addition to the three cardinal symptoms of pain, vomiting and constipation will permit of a diagnosis before the accession of fever, leucocytosis, distention, paresis and profound blood changes indicate the patient's condition to be one of extreme gravity. The preparation of such patients is most important and will depend upon their condition upon admission to the hospital; when dehydrated, lost fluids and chlorides are to be replaced and when debilitated, resistance increased by transfusion, before operation is undertaken. The Miller-Abbot tube offers a welcome

means of relieving distention, thereby facilitating the operative procedure. The type of operation must be suited to the local lesion and to the patient's condition; release of obstructing bands and adhesions, resection of tumors by the one or two stage methods, resection of gangrenous gut with end-to-end anastomosis or exterioration as a shotgun barrel enterostomy, enterostomy above the obstruction alone or enterostomy combined with its removal, all find their place in the various phases and stages of obstruction.

INTUSSUSCEPTION

Intussusception is characterized by symptoms which rather readily distinguish it from other forms of obstruction; namely, age incidence, bloody stools and a palpable mass. The common or ileocolic variety is seen in infants, the rarer colocolic is occasionally observed during childhood and a still rarer variety may be noted at any age and at almost any point of the intestinal tube due to perverted peristalsis dependent upon intraintestinal neoplasm. Pain, bloody stools and a palpable mass are the cardinal symptoms; with the onset of distention recognition of the mass becomes difficult and at times impossible. It is needless to add that diagnosis should be made and appropriate treatment instituted before distention becomes a feature. The intussusception is to be reduced not by traction on the gut at the point of invagination but by compression applied to the apex of the intussusceptum. Release of the imprisoned bowel with plication of its mesenteric leaf is readily accomplished if undertaken early. With the development of gangrene exterioration or resection of the involved segment becomes necessary, both procedures carrying a high mortality in infants; in fact, we have seen no recovery from either of these procedures when applied during infancy.

When confronted with evidence of obstruction it may be well to remember that during infancy intussusception is the common cause; that during early adult life hernia and peritoneal adhesions are responsible for a majority, while in late adult life carcinoma becomes the greatest causative factor.

HEMORRHAGE AND PERFORATION

The complications of peptic ulcer urgently demanding treatment are hemorrhage and perforation. Hemorrhage rarely presents as an emergency requiring operation for its control, but does at all times call for urgent and appropriate treatment and occasionally is of such massive extent as to lead to an immediate fatality. The treatment we have employed for massive hemorrhage consists of rest in bed, physiologic rest of the stomach, fluids and nutrition in the form of glucose administered subcutaneously and intravenously and whole blood transfusions. We formerly felt that fluids should be given intravenously in amounts not exceeding 250 c.c. in the belief that larger quantities by elevating blood pressure might cause further bleeding. We still feel that glucose and saline solutions should be administered subcutaneously, but have no hesitancy in giving transfusions of blood in amounts up to 500 c.c. and repeating as may be indicated. Occasionally a case will be met in which such measures fail when control of the bleeding becomes an indication for immediate operation. Acute perforations give rise to agonizing pain with coincident nausea and vomiting, the abdominal musculature assuming a board-like rigidity. Primary shock may be present or absent; when absent a normal temperature and pulse may lull one into a sense of false security. Delay in diagnosis and treatment at this stage is but to invite disaster; with the appearance of symptoms indicating peritonitis the favorable time has passed and the grim spectre of dissolution is in the offing. An ulcer history and the described onset suffice to make a diagnosis; an x-ray film made with the patient in the erect position, showing air under the dome of the diaphragm, affords confirmatory evidence. Our experience with acute perforations doubtless parallels that of other surgeons; we have

lost no patient operated on within six hours after perforation, and have saved but one operated on twenty-four hours or longer after perforation; within these time limits the mortality shows a progressive increase with each added hour of delay. Approximately 80 per cent of the acute perforations of duodenal ulcers occur on the anterior wall and 90 per cent of the acute perforations of stomach ulcers occur on the lesser curvature of the prepyloric portion; perforation of the posterior walls is frequently sealed by adherence of adjacent structures. Closure of the opening with superimposed layers of Lembert sutures and an omental fat graft suffices not only to control leakage but in a goodly percentage to secure healing of the ulcer as well. The employment of additional measures such as excision or cauterization of the ulcer, pyloroplasty, gastroenterostomy or resection of the stomach will depend upon the extent, character and location of the local lesion and the general condition of the patient. The prime consideration in such catastrophies is the saving of life; this is accomplished by the stoppage of the leak. It may be stated as a general rule that the greatest safety to the greatest number prohibits doing more, yet, in the presence of marked pyloric or duodenal obstruction, granting that the condition of the patient permits, a pyloroplasty, gastroenterostomy or resection may be done with reasonable safety, giving assurance of relief and obviating a second operation.

DIVERTICULA

Diverticulitis occurring in Meckel's diverticulum has been long recognized as a not infrequent cause of an acute abdomen; during the present century diverticula in other portions of the intestinal tract have come to be known as acting in a similar capacity. Acute inflammation, localized abscess, gangrene and perforation with resultant peritonitis, and obstruction all are noted as a result of their presence and disease. Hemorrhage and perforation complicating peptic ulcer in Meckel's diverticula are being recognized with increasing frequency as urgent indications for prompt surgical intervention. None of the symptoms are pathognomonic and a differential diagnosis can not be made on clinical evidence alone. Diverticula of the stomach, duodenum and jejunum are not infrequently associated with ulcer, pancreatitis and cholecystitis and when so the history will show the symptoms of the latter to predominate or else becloud the picture. With the exception of hemorrhage the symptomatology of the lesions produced by Meckel's diverticulum closely mimics that of the appendix and clinically is not distinguishable from it; the presence of an umbilical fistula or the occurrence of such symptoms in a patient from whom the appendix had been removed would afford a suggestive lead. Diverticulosis occurs far more frequently in the colon than elsewhere in the intestinal tract; autopsy records would indicate its frequency at five per cent of all persons over forty years of age and clinical observation has shown it present in the colon at practically all ages.

IMMEDIATE SURGICAL TREATMENT

The complications of diverticulosis which may demand immediate surgical treatment are acute diverticulitis, suppurative peridiverticulitis, perforation with diffuse peritonitis and obstruction. The symptoms of acute inflammation in a single diverticulum closely resemble those of appendicitis—pain, nausea, vomiting, localized tenderness and rigidity with an increased leucocyte count. If the diverticulum happens to be situated in the cecum or ascending colon a differential diagnosis will be impossible until the abdomen is opened. Obstructions of the colon due to diverticulitis are best treated by the two stage method; decompression proximal to the obstruction may permit of subsidence of the diverticulitis pathology to such an extent that no further operative measure will be required. In the event that such a fortuitous outcome is not at hand, the safety of the secondary resection will be greatly enhanced.

Acute pancreatitis is an infrequent cause of the acute abdomen, being responsible for less than one per cent of such cases. Its rarity and the similarity of its symptoms to those of perforated gastric and duodenal ulcers, gangrenous and perforative cholecystitis and, in its later stages, to those of intestinal obstruction account for the infrequency of correct preoperative diagnosis. Clinically it presents as acute pancreatic edema, acute pancreatic necrosis, acute hemorrhagic pancreatitis and pancreatic abscess which are not separate clinical entities but represent different stages of the same process, the origin of which is not entirely clear. The rapid destruction of pancreatic tissue is due to the activation of the trypsinogen within the gland itself; normally this is done by the enterokinase in the duodenum. The most logical explanation for its activation within the pancreas is that it is due to a retrograde injection of infected bile or duodenal contents through the ducts of Wirsung and Santorini as well as by the minute hemorrhages and bacterial toxins resulting from a pancreatic lymphangitis.

BILIARY TRACT INFECTIONS

Biliary tract infections have been present in more than fifty per cent of the reported cases and in all but two of the 34 cases observed by us. Pain, vomiting and collapse were the most important symptoms encountered. The physical signs will depend upon the stage at which the patient is seen; in some cases the lack of symptoms and physical signs is remarkable when compared with the extent and severity of the local lesion. Laboratory examinations are not of great aid in reaching a diagnosis; the white cell count in our series varied from 5,300 to 18,800; the urine in all showed albumin, none showed sugar; bile casts, microscopic pus and blood were noted. The liberation of the pancreatic ferments leads to an increase in the amount of diastase in the blood and urine; the urine normally contains 10 to 20 units of diastase; in acute pancreatitis this may be increased to 100 or 200 units, constituting a valuable corroborative symptom when laboratory facilities for its determination are available. Previous history of gall-bladder disease, pain radiating from the right costal margin across the upper abdomen, tenderness following the course of the pancreas, pain and tenderness to left of upper midline and the detection of a mass in the pancreatic area are beacon lights when elicited. Acute pancreatitis until within recent years has been universally regarded as an indication for immediate operation, the accepted indications being to relieve tension, to stop hemorrhage, to prevent leakage and to afford drainage. In the belief that operative procedure will neither lessen nor control the formation of trypsin nor prevent its further destructive action on the pancreas, there are many at the present time who contend that operation is best deferred until the acute pancreatic symptoms subside. The claim is made that by so doing opportunity is given for localization of the pancreatic disturbance, while early operation tends to break down protective barriers and to increase the dangers of necrosis and hemorrhage from trauma to the diseased organ. An analysis of our experience has led to the following conclusions:

1. The deferred operation offers definite advantage in selected cases, a correct diagnosis being essential to its employment.

2. Patients presenting jaundice and with palpable masses due to distention of the lesser peritoneal cavity, with manifest enlargement of the gall-bladder, or with evidence of spreading peritonitis are best treated by early operation.

3. Operative attack on the pancreatic tissue is not justified; drains, gauze or Penrose, should be placed down to but not in pancreatic tissue.

4. Bile tract disease, the predominant etiological factor in the light of present knowledge, should receive such surgical attention as time of operation and the local pathological condition permit. If early op-

eration is done, drainage at least should be instituted; in delayed operations a complete toilet of the bile tract is desirable.

ECTOPIC GESTATION

A ruptured ectopic gestation offers a dramatic picture which should give but little difficulty in interpretation. It seems to the writer that in the future the aim of the profession should be to prevent this complication by making an effort to recognize and remove an ectopic gestation before rupture of the sac. The history of one or two missed periods, pelvic pain, uterine bleeding with or without the passage of a membrane should lead one to insist on a vaginal examination; given such a history the finding of an enlargement at the site of the tube, with or without morning sickness and breast changes will be sufficient evidence upon which to base a diagnosis and to advise operation. The rupture of the sac is accompanied by sudden abdominal pain, at times vomiting, usually faintiness, anemia and collapse; the pulse is rapid, of small volume and the temperature is subnormal. The abdomen is tender but not rigid, vaginal examination reveals a tender pelvis with or without a palpable mass and at times percussion will reveal free fluid in the abdomen. Severe hemorrhage from a ruptured Graafian follicle gives a similar clinical picture but the accompanying evidence of pregnancy are lacking; indications for treatment in both conditions are identical. It has been argued in some quarters that death from hemorrhage does not occur and consequently that cases of ruptured ectopic gestation should be treated expectantly until they have fully recovered from the primary shock and depression. It is readily admitted that in some cases the shock and depression are out of all proportion to the direct blood loss, clearly indicating that in such cases factors other than hemorrhage play a rôle and that delayed operation in such instances may lessen the hazard to the patient. It is further admitted that if at the time patient comes under observation, some hours after rupture, there is evidence of cessation of bleeding, delayed operation may again be advantageous. On the other hand it is submitted from personal knowledge that patients do die from primary hemorrhage; it is further submitted that it is impossible to distinguish on clinical signs alone the case in which the alarming symptoms are largely due to shock from the one in which they are largely due to hemorrhage. The blood count cannot be relied upon for an accurate estimate of blood loss because of fluid concentration, hence unless the lapse of time since onset of symptoms and the condition of the patient plainly indicate that cessation of bleeding has occurred it has been our practice to rehabilitate the patient with transfusions and to do an immediate operation, following which further transfusion of blood and glucose solution subcutaneously or intravenously are employed.

ACUTE CHOLECYSTITIS

Acute cholecystitis furnishes an instance of the acute abdomen about the proper treatment of which there is as yet no unanimity of opinion. Typical cases are readily recognized, the atypical ones as readily confounded with appendicitis, leaking peptic ulcer and pancreatitis. Difference of opinion arises when the question of their consideration as surgical emergencies is approached; gangrenes and perforations readily fall within this category, but the advisability of immediate or of early operations in acute inflammations of the gall-bladder finds both proponents and opponents. To review the arguments for and against and to survey the statistical results are beyond the scope of this paper. Our personal belief and practice is to place the acute obstructive type of cholecystitis in the emergency group since 95 per cent of all gangrenes and perforations occur in acutely obstructed and infected gall-bladders. The infectious type of cholecystitis without obstruction does not carry with it much threat of these complications; both empyema and hydrops are chronic obstructive

lesions and are relatively free from such dangers, hence offer some basis for the arguments of those who would place them in the elective group. With coincident blockage of the cystic duct and the presence of active infection in the gall-bladder, delay only too often invites the appearance of complications which not only enhance the danger to the patient but increase the technical difficulty of a subsequent operation. Gangrene, perforation into the liver with the formation of an hepatic abscess, perforation through the free surface of the gall-bladder with diffuse peritonitis or, if walled off by adherent adjacent viscera, the production of a subhepatic abscess, cholangitis, hepatitis and pancreatitis all follow in the wake of acute infection in an obstructed gall-bladder and their prevention by early operation will give both a lower morbidity and a lower mortality than the expectant plan of treatment which consists largely in hoping and expecting the infection to subside before operation is undertaken. To consider them as emergencies does not prohibit the expenditure of some hours in buttressing the liver with glucose, in correcting the deviations in body chemistry and in restoring the proper balance in body fluids.

ABDOMINAL INJURIES

Abdominal injuries fall in two clinical groups; one in which there is an associated penetrating wound of the abdominal wall and the other in which no such wound exists. In the first the indication for surgical exploration is clear and unequivocal; the second affords opportunity for the display of surgical judgment in avoiding the dangers entailed by delay when serious injury is present. The solid viscera of the abdomen, liver, spleen, pancreas and kidneys, are situated high up under cover of the ribs; the hollow tubes, intestines, bladder, ureter and stomach, are more exposed to injury. Injury to the solid viscera causes hemorrhage, injury to the hollow viscera usually causes peritonitis, whilst both types of lesion are accompanied by shock. If the symptoms of shock do not abate in from three to six hours hemorrhage or peritonitis is almost certainly an additional factor. Increasing restlessness and pain, deepening pallor of the skin, quickening of the pulse and the elicitation of movable dullness in the flanks clearly indicate hemorrhage. Occasionally the symptoms of hemorrhage abate for a day or so then become alarmingly severe after exertion, particularly when the spleen is the site of injury. Hematuria is noted when the injury involves the kidney but its degree gives no indication of the extent of damage to renal tissue; perirenal hematoma and urinary extravasation point clearly to renal laceration. When anuria is present and the bladder is found empty on catheterization, rupture of the viscus is probably present; cystoscopy will afford a positive determination. Rupture of the intestine is the most common cause of peritonitis after abdominal injury; its presence is incompatible with life yet its signs and symptoms do not become positive for some hours. Given a case with a history of abdominal injury in which x-ray elimination of associated chest injury has been made, an exploratory section should be done when abdominal pain persists for four hours or longer accompanied by vomiting or increased pulse rate, or when local rigidity persists, particularly if it shows a tendency to extend or when there is deep local tenderness with shallow respiration. In the absence of severe pain if the patient is restless or listless and the pulse shows a gradual increase in rate the indication is equally clear. When marked diminution of the liver dullness occurs with any of the above symptoms or if there be signs of free fluid in the abdomen or rectal examination shows the pelvic peritoneum to be tender or a flat x-ray film shows the presence of air under the dome of the diaphragm the indications for operation would be imperative.

CONDITIONS SIMULATING THE ACUTE ABDOMEN

While it is vitally important to recognize and act upon the symptoms urgently indicating surgical intervention in acute abdominal

lesions it is also important to appreciate the source of threatening symptoms caused by conditions not amenable to surgery. A good general rule is to regard the presence of pain, nausea, vomiting and constipation for as long as six hours as indicative of an intra-abdominal surgical lesion until proved otherwise; while the absence of constipation and the presence of diarrhea usually betokens medical rather than surgical illness such cannot be accepted as positively excluding the latter. A well taken history combined with a complete physical examination from head to feet and an analysis of the blood and urine should be given every patient presenting acute abdominal symptoms; by so doing one may hope to avoid most of the pitfalls in diagnosis in conditions simulating the acute abdomen. The abdominal crises of lead poisoning at times give rise to symptoms not unlike those observed in perforations of peptic ulcers. Severe, painful colic, nausea and vomiting with board-like rigidity of the abdominal wall are present. A history of previous attacks, the occupation of the patient, the bluish discoloration of the gums when present and the stippling of the red cells all point to the true condition but do not rule out concomitant disease. The symptoms associated with lead colic may be dissipated within two or three hours by the administration of calcium chloride intravenously; in doubtful cases the additional time required for this therapeutic test will not materially enhance the risk to the patient with an acute lesion and may be the means of avoiding a needless operation.

GASTRIC CRISES

The gastric crises of tabes dorsalis may seemingly counterfeit the acute abdomen, especially gallstone colic and perforated peptic ulcer. The pains may be severe and uncontrollable vomiting may occur. The points to remember are—shock is absent, the temperature does not rise, the pulse may increase in frequency, but its volume remains good and possibly most important, the abdominal wall is not rigid in the intervals of the pain of a gastric crisis. This alone should direct attention to the pupillary reactions and knee jerks and to the history of luetic disease; at the same time it should be borne in mind that although these may be positive persistent, board-like rigidity of the abdominal wall means something more than a tabetic crises. Diabetic acidosis will at times exhibit the primary diagnostic criteria for the acute abdomen, namely, pain, nausea, vomiting, fever and increase in the white cell count. When one considers that infection in a diabetic may precipitate acidosis and that an acute abdominal condition may coexist with diabetes, the problem becomes somewhat complex. Doubtless in many instances a differential diagnosis cannot be made without the aid of blood chemistry and urinalysis. Any patient who has a history of glycosuria or in whom sugar or ketone bodies are found in the urine should never be operated on until investigations of the blood chemistry have been made. If these reveal diabetic acidosis to be present, no mistake can be made in treating this vigorously; if the abdominal symptoms subside as the acidosis improves, the diagnosis is relatively simple; if they do not subside, the assumption that a surgical condition exists is justified and the indicated surgical treatment may then be carried out. Diaphragmatic pleurisy and incipient or central pneumonia may cause abdominal pain and rigidity accompanied with vomiting, fever and leucocytosis. In children in whom the thoracic signs are late in appearing and in some cases of diaphragmatic pleurisy in which few signs may be found diagnosis may be difficult, particularly if the right chest be the one involved when the abdominal signs may strongly suggest appendicitis. The chest lesions frequently develop in the course of a common cold, are often initiated with a chill, the pulse-respiration ratio is lessened, the alae nasi dilate with inspiration, the psoas and obturator tests are always negative and pain and tenderness upon rectal examination are absent.

Pressure upon the left side of the abdomen increases the pain if it be abdominal in origin, fails to do so if it be thoracic in origin. Morphine in sufficient dosage to relieve the pain will aid in making a differentiation; if the lesion be in the thorax the rigidity and pain upon pressure will be absent while if it be in the abdomen pain will still be elicited upon pressure. Finally an x-ray film of the chest will be of help in cases which still remain doubtful.

IMPORTANCE OF DIAGNOSIS

Dr. Ross V. Patterson in an article upon Coronary Thrombosis with Special Reference to its Differentiation from Abdominal Surgical Conditions makes the following terse comment: "The importance of an accurate diagnosis in doubtful cases of abdominal affections is obvious. It may be emphasized that in those individuals past 40 years of age who exhibit acute fulminating pain in the upper abdomen, coronary thrombosis should be considered. Common to certain abdominal conditions and coronary occlusion are the following: rapidly developing, spontaneous pain of intense character, chiefly referred to the upper abdomen; muscular rigidity; epigastric tenderness; vomiting, followed by shock-collapse; fever, leucocytosis, and even jaundice and enlarged liver. With slight modification of the description these are the symptoms of gallstone colic, perforated peptic ulcer, acute pancreatitis, acute appendicitis and of various acute intestinal conditions. A laparotomy in such circumstances may prove fatal; indeed the occurrence of tragedies, the result of this error, is already a matter of record. Of cardinal importance in recognizing a coronary affection in doubtful cases is a history of arterial hypertension, previous attacks of angina pectoris, a sense of constriction in the chest although the pain may be almost entirely abdominal, aching in the arms, dyspnea, progressive fall in blood pressure, a rise in the pulse rate, feeble heart sounds, gallop rhythm, and the distinctive electrocardiographic findings early in the course." Calculi impacted in the right ureter and salpingitis, particularly in unmarried girls from whom a full and correct history is seldom obtainable, have also been sources of error. The urinary findings and the distribution of pain in the former should lead to a study of the urinary tract before resorting to operation; the pelvic tenderness in the latter, especially when bilateral, the preponderance of hypogastric over epigastric pain and the presence of a vaginal discharge should impel one to make a vaginal examination. The determination of virginity strongly suggests the appendix as the causative factor; in its absence a satisfactory pelvic examination will usually permit of a differentiation between the appendix and the Fallopian tube as to the causation of symptoms.

The acute pathological lesions of the abdomen which require surgical treatment and the various conditions which in their symptomology simulate them are always accompanied with pain. Important factors other than pain in making a differential diagnosis between these two large groups of disease, medical and surgical, are of apparent use. In both groups, however, pain is a dominant symptom and its distribution, its severity, its beginning, its cessation and its relation to other signs and symptoms are of the utmost importance in reaching a correct diagnosis. In by far the vast majority of the acute diseases of the abdomen requiring surgical treatment, the diagnosis is not a laboratory procedure. It is to be reached by correct evaluation of the history of the patient, prior to and subsequent to the onset of pain, and the physical findings which are presented upon examination.

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Unexercised Muscles

When muscles are not used, structural changes actually occur and wasting of the muscles results, *Hygeia, The Health Magazine* states in answer to an inquiry as to why muscles become "flabby" if exercise is discontinued.

MANAGEMENT OF URINARY INFECTIONS IN CHILDREN*

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SUCCESSFUL management of urinary infections in children depends on more than a knowledge of specific methods of treatment. It seems important to this paper to discuss not only the ways of controling these conditions, but to point out complicating factors and review diagnostic criteria. Our ability to cope with such infections is in direct proportion to our complete understanding of the situation presented. A correct anatomical and bacteriological diagnosis is most necessary and attention to prognostic factors must be given due consideration. Otherwise, faulty opinions will be formed and unwise treatment instituted.

Infections of the urinary tract manifested by the presence of pus and bacteria in the urine have been commonly spoken of as "pyelitis." It is recognized that the term pyelitis is not adequate, but because general usage in literature and in discussions has popularized it, its elimination would only cause confusion. It must also be mentioned at the start that the term pyelitis, strictly speaking, applies only to the pelvis of the kidney whereas, in a good proportion of cases, the kidney substance is also involved and a pyelonephritis exists. It is doubtful if pyelitis ever occurs unaccompanied by pyelonephritis, although in some of the milder acute cases, kidney involvement is minimal and is not progressive.

Structural characteristics of such urinary infections are essentially the same, regardless of whether these infections are hematogenous (descending), urogenous (ascending), or lymphatic in origin. Conclusions drawn about such pathology after a study of 100 selected cases at autopsy by Soma Weiss may be given as follows: (a) inflammatory reaction of the interstitial structures, (b) colloid casts in the tubules which are lined with atrophic epithelium, (c) periglomerular fibrosis, (d) evidence of inflammation within the tubules.

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ETIOLOGY

Since pyelitis is most frequently seen in the diaper age, *i.e.*, the first two years of life, age becomes an important etiological factor. The incidence definitely decreases when proper toilet habits are established. An occasional case is discovered in the newborn period and even more might be found in the first few weeks of life if frequent urinalyses were made the rule rather than the exception. It is recognized as one of the common causes of fevers in young children.

The condition is much more frequent in girls than in boys, except among the newborn where the opposite is true. During the diaper age, infection in females exceeds that in males by about five to one, while in later childhood the percentage is three to one.

It appears more frequently during the seasons when upper respiratory infections are prevalent. An interesting observation is that we also see more cases of gastroenteritis during the same time of year. There seems to be a close relationship between these two conditions and pyelitis. Changes in the mucus

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membrane of the bladder have been observed following exposure to cold. This may be predisposing factor of some importance.

Congenital anomalies of the urinary tract are not uncommon and in nearly every instance some stasis of urinary flow may be present. These anomalies consist in ureteral strictures, anomalous blood vessels, bands of adhesions, double ureters, obstruction at the bladder neck, valves in the posterior urethra and narrowing of the meatus resulting from ulceration caused by ammoniacal diapers. Abnormal kidneys in structure or position and the presence of stones must be considered. If bacteria enter the urinary tract above the obstruction, infection is much more apt to occur. Once infection is established in the urinary tract which is partially occluded, it is most difficult to eradicate. Lack of response to treatment in acute pyelitis should immediately suggest some obstacle to urinary flow. This is an important diagnostic point.

Neuromuscular dysfunction of the bladder due to faulty innervation is an important cause of retention of urine without physical obstruction. In this condition, there is a lack of coordination of the bladder muscles and the internal sphincter. Deformities of the sacrum, as spina bifida occulta, may be found.

The so-called surgical kidney due to renal tuberculosis is seldom seen in children. Miliary tuberculosis of the kidney is more common, but the children seldom survive long enough for genitourinary symptoms to develop and the condition is, therefore, found only at autopsy. With the decline of tuberculous infection in children, renal tuberculosis is bound to be more rarely found. Campbell discovered this disease as the cause of pyelitis once in 65 cases. Profuse hematuria, pain in the kidney region and sterile pyuria is suggestive of renal tuberculosis.

BACTERIOLOGY

No general agreement can be attained as to the route by which bacteria reach the urinary tract. However, it is fairly well agreed that, in all likelihood, streptococcic and staphylococcic types invade the urinary system by way of the blood stream. Those who believe in this mode of infection point to the frequency of pyelitis following osteomyelitis, peritonsillar abscesses, cervical adenitis, infected ingrowing toenails, furnunculosis, impetigo and chickenpox. Several observers decry the idea of focal infection as a causative factor in disease of another part of the body. The colon group of organisms are probably secondary invaders and reach the pelvis of the kidney by way of the ureters, ascending even against the downward flow of urine. This is substantiated by the fact that the condition is more frequent in girls during the diaper age. It is pointed out that the urethral orifice is frequently soiled by fecal matter and that the urethra is comparatively short. Inability to observe on the postmortem table the beginning of urinary disease in children has rendered exact knowledge of the origin of the infection debatable. Animal experimentation seems to verify what has just been stated, but we must not forget that animal experimentation does not always prove what occurs in the human body.

DIAGNOSIS

Acute urinary infection is not always easy to diagnose and several pitfalls are frequently overlooked. Physical signs are notoriously absent and it is rare that any evidence points directly to the urinary system. The only symptom that is constantly present is fever, which is usually irregular encompassing sharp fluctuations with evening increases and morning remissions. It may reach alarming heights as in one of my cases which, on several occasions, registered a temperature of over 108 degrees. Seldom are there any local symptoms of dysuria, abdominal pain or pain in the region of the kidneys. Whenever there is extensive involvement of the kidneys, symptoms are apt to be severe, resembling a toxic and frequently a meningeal condition. There may be marked pallor, nausea, vomiting, stupor and convulsions. The onset may be acute as in a pneumonia or

very gradual. The following case history is interesting:

Fifteen years ago, baby C., white, female, five weeks of age, was admitted to our hospital with a history of having been well for the first two weeks of life. She was fed partly by breast and partly by formula. She contracted an acute respiratory infection and three days after the onset, bronchopneumonia developed. Two weeks later, when the pneumonia had subsided, marked edema of the face and trunk appeared. There was a heavy cloud of albumin and many pus cells in the urine. The temperature rose to 103 degrees and remained at that level for three days. The child was in a convulsive state most of the last day of life. Autopsy revealed an acute pyelonephritis with marked involvement of the kidney substance. Treatment was not of any avail in so young a child when such a complication was present.

The diagnosis is usually made by examination of a catheterized specimen of urine which shows the presence of pus cells and a positive culture of the invading organism or organisms. A voided specimen collected in the usual manner is unreliable. Normally, the urine may contain four to six pus cells per high power field in males, and up to 10 in females. Even though no vaginal discharge is discernable to the naked eye, there may be sufficient pus cells present to confuse the issue; the same is true of a small ulcer at the meatus.

ABSENCE OF LEUKOCYTES

The absence of pus in the urine is not sufficient evidence that urinary infection does not exist. Certain cases occur in which no leukocytes are found but many bacteria may be present. Unless cultures are taken and repeated at intervals, we cannot be sure of the diagnosis or the results of treatment. Examination of the urine for pus cells must always be made on a well-shaken specimen, for a urine that has been allowed to stand or has been centrifuged will give abnormal findings and cannot be diagnostic of pyelitis. The presence of streptococci or staphylococci in urine cultures is most suggestive of invasions of the kidneys by these organisms and that perhaps a small abscess, or numerous abscesses, have broken through, draining into the pelvis of the kidney.

Blood examination generally shows a leucocytosis with a moderate increase in polymorphonuclears. There is usually a fall in hemoglobin and red blood cells but not commensurate with the pallor present. If much of the kidney is involved, retention of nitrogen products, especially urea, may be greatly increased and the output of phenolsulphonphthalein in the urine may be low. Failure to respond to the usual alkaline or acid treatments always suggests the possibility of urinary anomaly with stasis.

X-RAY EXAMINATION

In cases where persistence of infection continues for a month, or when recurrences happen at fairly frequent intervals, despite good treatment, further detailed study is indicated. Close cooperation between the pediatrician and urologist is needed under these circumstances. A flat x-ray plate of kidneys, ureters and bladder should be made for evidence of calculi as the first procedure. If this be negative, a subcutaneous or intravenous urography should be attempted. This can be done without much disturbance to the child and often an obstruction can be found.

Subcutaneous urograms have simplified the study of the urinary tract of children. The technique is somewhat different from that employed for intravenous urography. Fluids are restricted from 10 p. m. the night before. A laxative is given the first thing in the morning and a small amount of food is allowed just before the injection. Fifteen c.c. of a 35 per cent solution of diodrast with 60 c.c. of normal saline are prepared, one-half of which is given into each subscapular area, one-half per cent novocaine being used to lessen the pain. Plates are made at 10, 20, and 30 minute intervals following the injection. For intravenous urography, 15 c.c. of undiluted diodrast are injected into the vein without any fluid restriction the night before. Photographs are made at five, 10, 25 and 60 minute

intervals subsequently. Usually a retrograde urographic study is necessary in suspicious cases to obtain more accurate information.

CASE REPORTS

Case 1: G. T., white, female, four years old, was admitted to our hospital following an illness of four days duration. She had a high fever, was irritable, vomited and had slight abdominal distress. A right upper lobe pneumonia was discovered and successfully treated with sulfapyridine. An additional fact in the history revealed that about once a month for the past year she had had recurring attacks of fever and slight abdominal distress. A urinalysis showed a trace of albumin, an excess of red cells and clumps of pus cells, while a catheterized culture showed the presence of non-hemolytic streptococci. After recovering from the pneumonia, she seemed to have more general abdominal distress located largely on the left side. A subcutaneous urogram shows a double ureter and hydrocalyx of the superior part of the left kidney. A retrograde pyelographic study demonstrated the condition more clearly. Some improvement has been reported by the urologist following local treatment.

Fig. I. Double ureter on left side and hydrocalyx of the superior part of the left kidney. Subcutaneous urogram.

Case 2: E. K., white, female, nine years of age, was admitted to our hospital complaining of attacks of anorexia, vomiting, fever and irritability which have been occurring at irregular intervals since she was one year old. A diagnosis of pyelitis was made at that time and some treatment was administered sporadically during the past eight years. Abdominal signs were not definite except some slight general tenderness on deep palpation over the kidney regions. A urinalysis showed the presence of numerous pus cells and a catheterized culture revealed colon bacilli and non-hemolytic streptococci. A retrograde pyelogram on April 5, 1940, shows a rather marked bilateral hydroureters and hydronephrosis. These findings suggest that there has been a ureteritis and pyelonephritis that was probably dependent on a constriction of the lower ends of both ureters. Some improvement has been noted following local treatment by our genitourinary surgeon.

Fig. II. Marked bilateral hydroureters and hydronephrosis. Retrograde urogram.

Case 3: R. M., white, female, three and one-half years of age, was admitted to our hospital in June, 1939, complaining of frequency and pain on urination, chills and fever, slight tenderness in the upper right quadrant of the abdomen and in the right kidney region posteriorly. An indefinite history of some attack of kidney trouble at 10 months of age was obtained but no history of re-

peated attacks could be elicited. A urinalysis showed the presence of albumin, pus and blood. The P. S. P. kidney efficiency test was 32 per cent elimination in two hours. There was a tendency toward fixation of specific gravity but no retention of nitrogen products. Culture of the urine showed staphylococcus albus and colon bacilli to be present. A retrograde pyelographic study on June 20, 1939, revealed dilatation and irregularity of both ureters with a moderate amount of hydronephrosis on the right side. Much improvement has been secured by the conservative treatment of our genitourinary surgeon. It is felt that local treatment may be sufficient in this case.

Fig. III. Dilatation of the right ureter and considerable hydronephrosis of right kidney. Retrograde urogram.

PROGNOSIS

Prognosis depends upon a number of factors, including a correct anatomical and bacteriological diagnosis, with adequate treatment as soon as the disease is discovered. The general health of the patient, especially in regard to nutrition, must be considered. The mortality is definitely higher in the undernourished. Obstruction to urinary flow alters the prognosis and the earlier anomalies are found and relieved, the better the outcome.

The idea is rapidly gaining ground that a goodly number of cases have extensive and progressive kidney involvement which shows up later in life as chronic nephritis. To quote from Weiss again, pyelonephritis particularly in the chronic and the healed stages, is often associated with arterial hypertension, which may be present with normal, adequate or poor function of the kidney. The hypertension of pyelonephritis is often severe and is frequently accompanied by nervous symptoms, including cerebral encephalopathy, neuroretinitis and by toxemia of pregnancy. It can be independent of the activity of renal infection and often advances when the disease is in the healed stage. It is estimated that pyelonephritis is responsible for at least 15 per cent to 20 per cent of cases of malignant hypertension. The contracted kidney of pyelonephritis (renal rickets type) is related to infection in childhood and interference with growth, rather than to congenitally hypoplastic or aplastic kidneys.

TREATMENT

The treatment of urinary infections in children resolves itself into consideration of two major groups, the acute and chronic cases. The first is primarily a medical pediatric problem while in the second, close cooperation with the urologist is essential.

Acute Pyelitis: General measures such as confinement to bed, rest, good nursing care in control of diet, regulation of the bowels, care of the skin and control of excessively high fever, are important considerations in treatment.

1. Food. Sick children are hard to feed under any circumstance, but when gastrointestinal upsets, lack of appetite, vomiting and diarrhea are present in addition to the urinary infection, this part of the management becomes a difficult problem. Carbohydrates should make up most of the food in the first few days of the disease, increasing as rapidly as possible to full caloric values and proportional distribution of food materials. Skimmed milk with lactic acid added may be used for small infants. There is no

objection to soft foods being allowed in the milder cases of older children.

2. Fluids. Dehydration is apt to occur rapidly, especially in severe infections with great toxicity and high fevers. This deficit of water must be made up as rapidly as possible. It is generally accepted that the administration of large amounts of fluids, preferably by mouth, has the effect of diluting these toxins and increasing urinary output. Three ounces of fluid per pound body weight daily is desirable. By giving one-half ounce of fluid every 15 minutes, an infant can be made to take from one to two quarts daily. Plain water, water sweetened with saccharin, fruit juices with added sugar, weak tea and skimmed milk are the fluids of choice for administration by mouth. Additional fluids needed may be given by rectum, subcutaneously, intramuscularly or intravenously. Normal saline or Ringer's solution may be given under the skin or into the muscles, while glucose may be combined with either for intravenous injection. Such fluid administration contains enough food values for the first few days.

USE OF ALKALIES

3. Changing Reaction of Urine. Normally, the urine is slightly acid with a pH slightly under seven. To be effective against bacteria, the pH must be raised to nine with the use of alkalies, or reduced to five by administering acid producing drugs. These points in the pH must be attained to inhibit bacterial growth in the urine. Long usage of alkalies as sodium citrate and sodium bicarbonate in the treatment of pyelitis has firmly established this method in our modus operandi. About 40 grains of each of these drugs per day are necessary. The idea is to keep the pH of the urine about nine. Acidification of the urine to pH five may be rapidly secured by using ammonium chloride in 50 to 75 grain doses daily. Calcium chloride may also be used in similar doses. These drugs appear to be superior to sodium acid phosphate and benzoic acid in rapidly reducing the pH of the urine to five. Rapid changing from alkalinization to acidification seems to be helpful. Chlorphenol red paper may be employed to detect pH values to which attention has already been drawn.

4. A ketogenic diet with a concentration of beta-oxybutyric acid and a reduction of the pH of the urine to five has been recommended by Helmholz as an effective manner of treatment. Trained dietitians are necessary to control the diet which, in itself, is most distasteful to the child. This is not a practical way of management. Since the introduction of some of the newer drugs, the ketogenic diet has been abolished in the well controlled hospitals.

5. Urinary Antiseptics. Forcing of fluids, alkalinization and/or acidification generally give symptomatic relief and will clear up the milder cases. Undoubtedly, a few cases seem to be self-limited, but others necessitate the use of urinary antiseptics to eradicate the pus and destroy bacteria. Methenamine is a drug of proved antiseptic value and may be given in doses of 10 to 20 grains daily. Its value is enhanced if the acidification of the urine is brought to a pH of five. Cultures should be taken every several days and, as soon as sterile, the drug should be discontinued for three days and then another culture taken. If this be negative, the indications are that perhaps healing has occurred. Increasing doses are needed if cultures are positive. In the event that hematuria occurs during such a course of treatment, the drug must be stopped and recourse to some other urinary antiseptic taken.

MANDELIC ACID

Mandelic acid, either as a syrup or an elixir of the ammonium salt, may be used in doses of 40 to 60 grains daily. The fluid intake should be curtailed and the urine kept strongly acid for good results to be secured. Ammonium mandelate is not palatable and quickly upsets the stomach, causing vomiting. Calcium mandelate is less irritating, not soluble in water and must be prescribed in

powdered form. To be effective, a concentration of one-half to one per cent of the drug in the urine must be secured.

Sulfanilamide has further simplified the treatment of urinary infections. It has several distinct advantages over similar antiseptics. It will act in either an acid or alkaline urine but is more effective in the latter, is more easily tolerated and can be concentrated in the urine more readily by a damaged kidney. Sulfanilamide may be given in one-half to one grain doses per pound of body weight, combined with sodium bicarbonate in equal amounts. It should be continued for five to ten days unless some idiosyncrasy develops. Cultural studies of the urine are necessary to determine the result of treatment. The drug may be used during the acute stages and does seem to give symptomatic relief.

Neoarsphenamine has been found to be beneficial in coccal infections of the urinary tract, but not of much value in combating the streptococcus fecalis. Ascending infections do not respond as well to this drug as hematogenous (descending) infections. Small doses of 0.1 to 0.2 gram are as efficacious as large ones and produce fewer reactions. Three doses seem to be the maximum needed for the best results.

6. Focal infections in other parts of the body must be energetically treated and eradicated if possible. In the case of diseased tonsils, decision as to the time for their removal is a difficult one to make. However, results from such an operative procedure in relation to curing pyelonephritis are debatable. Tonsillectomy does not have much influence in controlling chronic nephritis.

Chronic Pyelitis: In all cases of urinary infections that persist for over one month and fail to respond to the usual treatment of forcing fluids, changing the reaction of the urine and the use of various urinary antiseptics, some complications may well be suspected. In these cases, close cooperation with a competent urologist is necessary. Careful study as already outlined usually reveals the nature of the complication, and surgical measures can be adopted to fit the case. Dilatation of strictures, removal of stones, lavage of the urinary tract with local antiseptics, removal of pyonephrotic kidneys with the ureter (in unilateral cases), are some of the measures employed. It must be ever borne in mind that young patients are different from adults and merit more precise attention, for they stand poorly the loss of fluids, blood and heat, and their metabolic processes are more easily upset.

Urinary infections have been considered from several standpoints, with emphasis placed on diagnosis and treatment. Present information suggests that such cases are not all easily cured and, while local findings are negative, the disease may be progressing in the kidney substance, eventually leading to a chronic interstitial nephritis or malignant hypertension in later life. Chronic or recurring cases should be the joint responsibility of pediatrician and urologist. The earlier chronic cases are fully studied and a complete diagnosis made, the better the prognosis.

DISCUSSION

Dr. Russell Bond, Wheeling: I would like to place emphasis on several points. (1) Urinary infections in children are very common and often explain fever of unknown origin. (2) Urinalyses are of vital importance and should be done routinely and frequently on all patients. (3) One urinalysis from a sick child is not sufficient, for many times a second or third specimen of urine will reveal abnormalities on microscopic examination. (4) It has been my custom not to centrifuge urines before examination under the microscope for they are often misleading. In my own office I do not use the centrifuge and teach my internes to look at urines in the same way, that is, uncentrifuged. (5) When pyuria does not respond after a reasonable length of time, one must consider a urinary tract abnormality. These abnormalities are not rare. In such cases a complete study should be made by a competent urologist.

Dr. W. W. Waddell, Jr., University, Va.: With the recent advances in urological procedures and refinement in urological instrumentation, it

can be safely stated that no child is so young as to preclude a urological study comparable to that usually accorded to adult patients.

I am impressed with the frequency with which congenital anomalies and associated obstruction occur. These anomalies are not difficult to demonstrate if an adequate urological study is made. I would, therefore, emphasize Dr. Tyson's urging that we be more careful and more prompt to seek urological consultation and therapeutic aid in those cases which do not promptly respond to the usual medical therapy. Failure to make use of present facilities in diagnosis and treatment will in many instances subject such children to permanent kidney damage.

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THE ANDROGENS IN MEDICINE

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THE testicle appears to have been the first of the glands of the body suspected of having an internal secretory function, for the physical and mental attributes of eunuchs have been known for centuries. It is understandable that this most accessible of glands should have its endocrine rôle discovered before a humoral or similar mechanism was evident for other glands of the mammalian body. However, it is odd indeed that much accumulated knowledge of the chemistry of less accessible tissues, such as the thyroid, pancreas, adrenals and even the ovaries, should have preceded any information of the chemistry of the testes. Such peculiar spurts in the progress of knowledge of the processes of living matter are fortuitous. Rapid progress in scientific endeavor comes only with the proper combination of required material, coordinated effort, and the indispensable basic knowledge whereon new information must rest.

This basic knowledge has been, in the case of the androgens, both biological and chemical. Berthold in 1849,[1] demonstrated by a controlled experiment the internal secretory function of the testes in the cockerel. He transplanted testes and amputated combs to prove the existence of a humoral mechanism. The work of Pézard, Champy, Courrier, Aron and others,[2] at the end of the last and the beginning of the present century, yielded the following information: (1) Castration of immature male animals prevents the development of secondary sex characters. (2) Castration of adult male animals allows a regression in size of sexual organs. (3) Such deficiencies of development are prevented or corrected by implantation of testes. The careful studies of Wieland, Windaus, Rosenheim, King and others[3] on the structure and chemical reactions of cholesterol and related compounds prepared the essential chemical groundwork for advance in knowledge of the androgens.

A few preliminary attempts at extraction of active principles from the testes were reported by numerous investigators in the past generation. Occasionally promising effects were obtained by the use of such extracts, but results were never so clear-cut as to enable them to be repeated or successfully followed up by other laboratories. Koch[4] has adequately reviewed these early attempts at extraction of the testes. Failures were due pri-

marily to the use of insufficient quantities of tissue. The combination of an ample supply of bull testicles from the Chicago stockyards and a cooperative program between the Department of Physiological Chemistry and Zoology at the University of Chicago made possible the devising of suitable methods for extraction and assay of material. In 1927 it was found that the proper use of fat solvents on large amounts of finely ground bull testes yielded extracts showing well-defined protection against the morphological changes following castration in cockerels, rats, and guinea pigs.[1 5 6 7]

ANDROGENIC ACTIVITY

Loewe and Voss[8] confirmed the potency of extracts as prepared in the Chicago laboratory. In addition, they demonstrated the presence of androgenic activity in the urine of men. In the past decade the contributions of many laboratories, representatives of many nationalities, have written a brilliant chapter in the history of biochemistry. Numerous assay methods, chiefly biological, were necessary in this development. The following criteria for androgenic activity have been described:

(1) Growth of the Comb in the Capon: A Gallagher and Koch unit[4] is the amount per day which, injected daily for five days, yields an average of five mm. increase in length plus height of the combs on at least five brown Leghorn capons. The Butenandt and Tschering unit[2] is the amount in one c.c. of sesame oil injected subcutaneously on each of two days which gives on the fourth day an average increase of 20 per cent in the surface area of the comb of three capons. Freud, de Fremery and Laqueur (1930-32)[9] defined a unit as the minimum daily dose which, when introduced in two injections per day for four days, causes on the fifth day an increase of 15 per cent in the area in over 50 per cent of the capons. They photographed the shadows cast by the comb before and after injection under constant conditions. The areas were determined by planimetry.

The response of the comb in the capon is affected adversely by increasing intensity of light or by increasing temperatures.[10] The initial size of the comb and the age of the capon used for assay are not important factors.

Frank and Klempner, 1937,[11] used six-day old chicks in assay by applying the androgenic material along the base of the comb (0.1 c.c. from a needle) for 10 days. The chick was then killed, the comb cut and weighed. Callow and Parkes,[12] using five mg. of androsterone in oil per day, demonstrated the maximum comb increase to be 85 cm. (L. x H.) in 22 days. Emmens, 1938,[12] implanted compressed tablets of crystalline testosterone propionate into the muscle of capons (five to sixteen mg. per bird). The combs attained full size, equal to that of normal cockerels, in 40 to 45 days. Larger doses caused no faster growth of combs. The effect persisted for 60 to 70 days, and then regression took place.

HORMONAL ACTIVITY

(2) Changes in Penis and Seminal Vesicles of Castrated Guinea Pigs: Ancel and Bouin, 1906,[13] used the length and weight of penes and of seminal vesicles in castrate guinea pigs in an effort to demonstrate hormonal activity. Steinach, Moore, and others further studied regression in accessory sex organs after castration.[4] The return of seminal vesicles in the castrate to a normal weight, length, and histologic structure after injection of testes preparations was reported by Moore, Gallagher, Hughes and Koch,[14] Voss,[15] and Martins.[16] Tschering,[4] defined one "seminal vesicle unit" as the dose by injection required daily for eight days in infantile male rats to develop a normal adult type of epithelium in the prepuberal seminal vesicles. The animals are sacrificed at the end of the period of injection and the seminal vesicles are examined microscopically.

(3) The Motility of Spermatozoa: In 1925, Benoit observed that spermatozoa in the ligated epididymis retained motility longer when the testes were intact than in

castrates.[7] Moore and McGee[7] used spermatozoon motility to demonstrate activity in extracts. In guinea pigs spermatozoa were motile for less than 20 days after castration. During the injection of extracts of testes the motility was continued to 40, 50 days and longer.

(4) Prostate Reaction: The prostate cytology test was presented by Moore in 1930.[17] Others workers have studied histological changes in the prostate as a guide to hormone effects.[4] Korenchevsky, 1932-35,[18 19] defined a rat unit as the amount required to cause a 40 per cent increase in weight of the prostate as compared with untreated, castrated control rats.

(5) Preputial Gland Changes: Voss, 1931,[20] showed that the preputial glands of the castrated mouse could be regenerated by male hormone preparations. Dingemanse, Freud, and Laqueur[21] used the increase in weight of preputial glands in castrated rats as a criterion for male hormone effects. This test has been used by van der Woerd in studying androgenic activity of various compounds.[22] Androgens stimulate the growth of preputial glands of both sexes in rats.

(6) Pigmentation in the Sparrow: Keck, 1932-34,[23] and Witschi, 1936,[24] demonstrated that bill pigmentation of the English sparrow is controlled by the male hormone. Using castrated sparrows, the activity of suitable extracts could be demonstrated.

(7) Mating Pigmentation in Fish: Glaser and Haempel, 1931-32,[25] found that the appearance of the mating pigmentation in the castrated carp was a measure of hormone activity. Fish, however, are particularly susceptible to the toxic substances present in crude urine extracts given by injection. Castelnuovo, 1938,[4] noted that small doses of testosterone (four I. U.) accelerated spermatogenesis in the maturation of the carp.

(8) Color Reactions: Of several which have been reported, the most important is that described by Zimmermann in 1935.[25] A one or two per cent solution of m-di-nitrobenzol in absolute ethyl alcohol to which is added liquor potassae (5.8 per cent potassium hydroxide) in the presence of 17 keto-sterols, gives a pink to violet color.[27] The method was found useful for the estimation of androgenic activity of urine extracts by Callow, Callow and Emmens,[27] Oesting,[28 29] Friedgood,[30] Aub, and others.[31] Oesting[28] performed capon comb growth assays in parallel with the colorimetric estimations of androgenic activity and found that while one color unit is represented by 90 gamma* of crystalline androsterone, the biologic activity of a color unit from urine extracts was found to be approximately equal to 10 gamma of pure androsterone. Such a wide range between the comb growth activities of comparable color units of the pure androsterone as compared with urine extracts, he suggested, arose from these facts:

(a) The chemical reaction is non-specific.

(b) The urinary androgens are of varying chemical constitution and not always excreted in the same proportion.

(c) There are variations in the biological assay. Comb growth response of two capons is rarely the same.

(d) Non-active, androgen-like color producing sterols are present in the urine or arise during hydrolysis (acid) in extraction.

PURIFICATION AND SYNTHESIS

Butenandt in 1931 obtained 15 mg. of crystalline androsterone from the crude extract of 15,000 liters of urine. In 1932, when there was in existence no more than 25 mg. of the substance, he suggested the correct formula for androsterone![3] Ruzicka,[32 33] a Swiss chemist, proved the structural formula by synthesizing androsterone from cholesterol. In the meanwhile, Gallagher and Koch[4] obtained concentrates from bull testicles which were five to ten times as active as androsterone, which activity was destroyed by alcoholic potassium hydroxide, unlike crystalline androsterone. In 1935, Dingemanse, Freud and Laqueur[34] obtained a pure

* (one gamma = one microgram = 0.001 milligram).

crystalline hormone, testosterone, from testicles (10 mg. from 100 kg. tissue). Of this preparation 10 gamma was approximately equivalent to one capon unit. Later in the same year Butenandt and Ruzicka independently synthesized testosterone from cholesterol.[3] With this knowledge scores of derivatives of the phenathrene nucleus were prepared, many of which showed varying degrees of male sex hormone activity. Six related and active substances have been isolated from urine and tissues.[35]

In Koch's laboratory it has been shown that testis tissue contains relatively small concentrations of testosterone, extraction methods yielding 1.0 I. U.* from 50 to 150 gm. of tissue[4] (later extimated to be 90 to 270 mgm. of testosterone per ton of tissue).[35] The same laboratory found four I. U. per liter of whole blood.[35] McCullagh and Osborn[36] found approximately four I. U. to be the androgenic content of 100 c.c. of whole blood in young men. Their method includes acid hydrolysis and extraction with dibutyl ether.

It is fairly well established that in urine there is an inactive, water soluble, fat insoluble form of the androgenic substances. The active forms freed from possibly a hexuronide combination by hydrolysis, are fat soluble and water insoluble.[35 36]

CONCENTRATIONS OF ANDROGENS IN URINE

	I. U. Per Day	Mg. Expressed as Androsterone
Men's urine (25-35 yrs.)	40-100	40-10
Women's urine (23-34 yrs.)	30-100	3-10
Boys' and girls' urine (6½-10 yrs.)	0.7-2.0 (per liter)	0.07-0.20 (per liter)

Dorfman and Freulich found that boys and girls between six and ten years of age excrete 1.1 to 30 I. U. androgens per 24 hours.[37] Oesting and Webster, 1938,[37] assaying by both comb growth and the colorimetric method (m-di-nitrobenzol) found:

Boys (3-15 yrs.).....27-300 color units (2.7-30 I. U.)
Girls (3-15 yrs.).....20-277 color units (2.0-22.7 I. U.)

Nathanson, Towne, and Aub[31] reported by the colorimetric estimation the 24 hour excretion to be:

Boys' urine (6-13 yrs.).....6.5-22.6 I. U.
Girls' urine (7-12 yrs.).....5.5-14.7 I. U.

McCullagh and Lilga[38] found by capon assay that normal men excrete 16 to 86 I. U. of androgenic material daily.

Koch[4] found relatively lower concentrations of androgens in the urine of the stallion, bull, ram and rat (one to four I. U. per liter). Dorfman and Wagenen,[39] reported the excretion of one to 4.7 I. U. androgen activity per 24 hours in urine of adult monkeys.

IMPORTANCE OF STEREOISOMERISM

Koch[40] pointed out the importance of stereoisomerism in the activity of the various compounds which have been identified. Briefly, it was noted that (a) in the saturated series the active forms are those compounds which have hydrogen on carbon five in a transposition with reference to the methyl group on carbon 10. (b) Configuration of the secondary alcohol group in positions three and 17 are important in both the saturated and unsaturated series. The more active compounds (a ratio of thirty to one with testosterone, Ruzicka) have the hydroxyl group in transposition in reference to the nearer methyl group.

A factor which enhances the effects of some androgens in mammals has been described by Laqueur.[4] This is a non-androgenic, fatty-acid fraction from bull testes. Certain esters, alcohols and fatty acids when injected with testosterone increased markedly the latter's androgenic potency in mammals. This was not manifest in the capon comb growth assay, nor were the urinary androgens given increased effectiveness in mammalian assay. Kochakian[41] found an activating factor in male castrate dog urine, which increased the effect of testosterone in rat assays by fifty per cent.

Comparatively large amounts of androgens are excreted by patients with adrenal tumors. Kenyon and Koch[40] found 480 I. U. of androgenic activity in one case of carcinoma of

* (One International Unit = 100 gamma androsterone = approximately one capon unit of Gallagher and Koch.)[4]

the adrenal gland. Crooke and Callow, 1939,[42] found large amounts of transdehydroandrosterone in urine from the form of basophilism (Cushing syndrome) associated with adrenal cortical tumors. They pointed out that a study of urinary androgens may lead to a differentiation of the type of basophilism in a given case (i. e., whether associated with adrenal or pituitary tumor). There are numerous reports indicating that instances of virilism without tumors, may have two or three times normal urinary androgen output. McCullagh and McLin, 1938,[43] introduced the use of dibutyl ether in place of benzene to extract androgens from urine. Their method is to acidify urine with 50 c.c. of concentrated sulfuric acid per liter and boil for 15 minutes. The urine is then stirred violently for 30 minutes with dibutyl ether, 200 c.c. solvent for each liter of urine. On the average their yields are but slightly higher than those obtained with benzene. Dingemanse and Laqueur, 1938,[44] confirm Koch's finding that 15 minute hydrolysis of urine with hydrochloric acid is the optimum time to prevent loss of activity in the absence of benzene. However, if benzene is present during hydrolysis prolonged boiling with acid (two to six hour period) does not cause loss of comb growth promoting substance.

GYNECOGENIC EFFECTS

The biological effects of the various androgens are more extensive than one would have expected a decade ago from the male sex hormones. There is a definite action on various structures considered attributes of muliebrity. Thus one now speaks of gynecogenic properties as well as androgenic properties of an androgen! Deanesly and Parkes, 1936,[45] demonstrated that 10 compounds of androsterone-testosterone group stimulate the growth of uterus and vagina of mammals. Selye, McEuen and Collip, 1936,[46] Astwood, Geschickter, and Rausch, 1937,[47] Bottomly and Folley, 1938,[48] observed that testosterone administered to rats caused development of the mammary glands. Nelson and Merckel, 1937,[49] with several crystalline androgens, obtained the following effects in the female rat: 1. Mammary proliferation; 2. enlarged uterus; 3. estrus smears, and 4. enlarged preputial glands and clitoris.

VARIOUS ANDROGEN EFFECTS

Emmens, 1938,[50] presented a table showing a comparison of gynecogenic and androgenic effects of various androgens of known chemical composition. To a limited extent the androgenic activity appears to be most marked in those compounds showing the strongest estrogenic activity. Nathanson, Franseen and Sweeney, 1938,[51] showed that testosterone injection in the absence of ovaries and hypophysis caused vaginal opening, cornification and enlargement of the uterus without secretory changes. In intact animals there were uterine secretory changes and growth of the tubes together with the follicles and corpora lutea in the ovaries. Dantchakoff, 1938,[52] gave testosterone to young female guinea pigs after birth and observed little masculinizing but marked feminizing action. Folley, Guthkelch and Zuckerman, 1938,[56] reported that androgens stimulate monkey mammary glands. Rubinstein, Abarbanel and Nader[54] found that testosterone propionate stimulated vaginal opening in both nonspayed and spayed immature female rats, i.e., shows a vaginal effect independent of the ovary.

Nathanson, Franseen, and Sweeney, 1938,[55] as a result of their study of testosterone effects in the immature female rat, concluded that there is (1) a direct action upon the vagina (noted in the absence of ovaries and/or hypophysis); (2) a direct action upon the uterus (noted in the absence of ovaries and/or hypophysis); (3) changes in the tubes only when corpora lutea are present in the ovary; (4) an indirect action upon the ovary due to stimulation of the anterior hypophysis, which in turn elaborates the gonadotropic hormones to elicit follicle growth, maturation and corpus luteum formation. Shay, and co-workers, 1939,[56] gave

large doses of testosterone propionate to young rats from the age of one day, and reported that:

1. The vaginas opened no earlier than in litter mate controls.
2. There were positive vaginal smears (cornified epithelia) in some animals.
3. The animals were sterile at maturity.
4. The clitoris was enlarged in all treated animals.
5. A number of animals developed large cystic lutein-containing ovarian tumors; others had atrophic ovaries.

THE PRODUCTION OF INTERSEXUALITY

From purely biologic observation, Lillie long ago explained the basis for the development of the genetic female twin in cattle (free martin) in the presence of a common placental circulation.[57] A stimulation of Wolffian duct structures, without evident inhibition of Mullerian duct elements can now be produced experimentally in pregnant laboratory animals by injecting testosterone. Ivy and his collaborators have injected testosterone propionate into pregnant rats in the last trimester of pregnancy. The animals showed stimulation of the Wolffian duct derivatives. Two-thirds of the rats aborted or resorbed the young. Of the remainder, 86 per cent of the females showed some evidence masculinization. Those births which occurred at term often yielded uteri, oviducts and upper vagina combined with an epididymis, vas deferens, seminal vesicles, ejaculatory ducts, the valvous prostatic lobes, Cowper's glands, and a penis in the same animal.

Dantchakoff,[58] injected guinea pigs in uteri with testosterone. The young pigs developed a complete set of male accessory organs but sometime after birth, in spite of continued treatment, the vas deferens and epididymis regressed while the uterus developed rapidly. The ovary was unaffected in histologic structure. Hamilton and Wolfe[59] also studied the effects of daily injections of testosterone propionate, given to rats between the tenth and seventeenth days of pregnancy. Birth was prevented if the injections were given before the fifteenth day. The effect on the fetus was two-fold: 1. Arrest of development and lack of viability in those injected early in pregnancy, and 2. abnormal development — all of the female offspring appeared superficially to be masculine in their perineal characters. On growth to maturity nevertheless, the reproductive system of such young became functional. Raynaud, 1938,[60] gave dehydroandrosterone by injections subcutaneously (10-50 mg.) into pregnant mice five to nine days before parturition. No feminizing action was noted in the male embryos. The female embryos, however, besides having normal female genitals had a rudimentary prostate and male urethra.

MISCELLANEOUS OBSERVATIONS

Moore, Lamar and Beck[61] rubbed testosterone and testosterone propionate in an ointment base on the skin of guinea pigs and rats. The absorption through the skin was adequate to produce the typical effects on accessory reproductive organs. McCullagh and Cuyler[62] found the comb growth response far more sensitive to inunction administration than to injection.

Moore and his co-workers[63 64] have shown that the evidence of antagonism between administered estrogens or androgens and the gonads in an animal is, in reality, a pituitary effect. Histological changes in gonads result from loss of pituitary influence. Injections of androgens or estrogens apparently inhibit normal pituitary control (gonadotropic effect) of the sex glands left in an experimental animal. It was found that cell destruction, with inhibition of sperm formation and decrease in weight of the testes, occurred in normal rats treated by injections of testosterone or testosterone propionate. Lattes[65] found that continuous injection of testosterone (total dose 120 to 190 mg.) into immature rats produced degenerative changes of the testes. Similar findings are reported by Korenchevsky and Hall[66] and Biddulph.[67]

Further evidence that the damage results from suppression of the pituitary influence is obtained by Bottomley and Folley.[68] In young male guinea pigs receiving both horse anterior lobe extract and testosterone simultaneously, the testes were protected from atrophic changes which occurred when testosterone was given alone.

Urbain, Cahen, Pasquier and Nouvel[69] reported that zinc sulphate given with testosterone propionate in oil by parenteral injection to castrate, immature male rats, increased the weight of seminal vesicles and prostate by 60 to 115 per cent above that which occurred with the hormone alone. That exposures of adult males to the erythemia dose of ultraviolet light (quartz mercury lamp) increases markedly the urinary androgen is a finding of Myerson and Neustadt.[70] The increase in excretion subsides to normal in a few days after irradiation is stopped. Curiously, irradition of the scrotum and vicinity proves to be more effective than irradiation of other parts of the skin. Vest and Howard[71] have devised an instrument to facilitate the subcutaneous or intramuscular implantation of compressed pellets of pure testosterone. This method has the purpose of supplying a constant source of the hormone over periods of weeks to months in patients. It is too soon to evaluate the ultimate results of such a procedure. The most effective androgen for oral use is reported to be methyl testosterone in doses of 10 to 50 mgm. daily.[72]

PRODUCTS OF ADMINISTERED TESTOSTERONE

Callow and Callow[73] find about the same fractions of aetiocholan -3 (a) - o1 - 17 - one, androsterone and transdehydroandrosterone in urine of both men and women. These authors find also that the chief excretory products of administered testosterone are androsterone and its isomer aetiocholan -3 (a) -o1 -17 -one, and feel, from investigations on increased androgen excretion in the presence of adrenal cortical tumors or cortical hyperplasia, that "transdehydroandrosterone is more probably derived from the adrenal cortical secretions." There is growing evidence that much of androgen activity of urinary extracts represents excretion of products of the adrenals.[74] Hooker and Collins[75] find the androgenic activity of crystalline desoxycorticosterone acetate to be approximately one-thirtieth as great as that of androsterone, using assays in capons, rats, and mice.

CLINICAL APPLICATION OF THE ANDROGENS

Obviously, it appears that the androgens should be useful in replacement therapy for males having lost the testicles (eunuchs, castrates) or those showing hypofunction of the testicles (eunuchoid or hypogonad state). Zehn[77] and Zahler[78] treated eunuchs with testosterone propionate and obtained improvement in sexual function and general well-being. Rubenstein [79] in a male patient with genital hypoplasia obtained marked development of the genitalia but no effect was produced on the secondary sex characters. On the other hand, Webster,[80] in six instances of adolescent hypogonadism (using 25 mg. doses of testosterone propionate three times weekly) brought about growth of the penis, scrotum, prostate and the appearance of secondary sex characters. Foss,[81] by percutaneous application of testosterone propionate in a fatty vehicle or alcoholic solution, in three instances of adult hypogonadism produced increased sexual function, hirsutes, and virility. He also treated a traumatic, postpuberal eunuch of 19 years duration (age 38 years) with testosterone (140 mg. the first week and 40 mg. weekly thereafter for 12 weeks).[82] The response was an increase in libido, ultimately priapism unrelieved by coitus, and a marked growth of hair and beard. Kenyon, et al[83 84] found that testosterone propionate caused enlargement of the prostate, improved secondary sex characters, a gain in weight and increased nitrogen and sodium retention in patients with the eunuchoid state. These showed also a reduced phosphorus and creatine excretion. Similar effects on the metabolites were obtained in normal

young men and women. It was concluded that the amount of protein retained by the patients in the eunuchoid state "is not accounted for by increases in the bulk of genital tissues and represents deposit of new material elsewhere in the body. This, together with the reduction in the urinary excretion of inorganic phosphorus, potassium and creatine, points to a somatropic influence of androgens and provides a clue to the explanation of unusual body growth accompanying precocious puberty." Papanicolaou and Falk, 1938,[85] demonstrated that testosterone propionate produced general muscular hypertrophy in castrated immature male, spayed and normal adult female, guinea pigs. They think this effect may explain the higher muscular development of the male mammal.

SUBSTITUTION THERAPY

Zahler,[86] Eidelsberg and Arnstein,[87] Villaret, Justin-Besancon and Rubens-Duval[88] have likewise used the androgens as substitution therapy successfully in eunuchs or the eunuchoid states. Werner[89] feels that some vasomotor and other nervous symptoms of men in the sixth decade are evidence of a "male climacteric syndrome." Two cases had amelioration of the symptoms under androgenic therapy in his hands. Dunn[90] likewise finds improvement in the nervous symptoms and general well-being of patients in the male climacteric or gonadal insufficiency states.

There is no unanimity of opinion regarding the effect of the androgens on the prostate in normal man.[91] The prostate of castrate laboratory mammals, and of the eunuchoid state is uniformly increased in size under hormonal therapy.[17 19 68 83 86 92 93] However, in the prostatic hypertrophy of senile men successful therapeutic use of the androgens has been reported.[94 95 96] Vidgoff and his collaborators[97] describe a method of obtaining a testis extract which, on injection, reduces to one-half normal size the prostates of adult male rats. This presumably is an androgen-free extract. Altenburger[96] thinks that the assumption of a second testes factor (proposed as inhibin by McCullagh)[98] is not necessary. He suggests that if androgens cause improvement in hypertrophied prostates it may be due to its effect on the hypophysis, implying that the condition was caused in the first place by the relative overproduction of gonadotropic substance by the hypophysis. The answer to this state of confusion is not clear. One may be misled by clinical improvement in symptoms of prostatism. With bed rest, and catheterization spontaneous remissions occur in the symptoms of such a patient. Objective studies of the prostate before and after the use of the androgens, as reported by Sharpey-Schafer and Shackman[99] for one patient, should be made for a series of patients. The biopsy showed no significant histologic change in that instance. Heckel,[100] from a histologic study, could find no diminution in size of the prostate in urological cases treated by injections of testosterone propionate. That a clinical evaluation of medical treatment for prostatic obstruction is highly unreliable is shown by the control series of Clarke[101] where the condition of 80 per cent of a group of 93 patients, observed over an average of four years, was either improved or remained stationery without surgical intervention of other attempt at specific therapy.

TESTOSTERONE PROPIONATE

Hesser and co-workers[102] have found that testosterone propionate injections increased the strength of the finger flexors (dynamometric response) in two patients with myontonia atrophica. Improvement was noted within one week and reached a peak in the third week. Laroche[103] reported an improvement in the muscle tone (by ergograph), psychomotor reactions and bladder function in seven men, ages 53 to 68 years, receiving testosterone. In acne vulgaris, testosterone propionate produces no marked improvement in the hands of Riley[104] or Cornbleet and Barnes.[105] Others have found that acne may be caused by the injection of androgens. Joltrain[95] thinks the androgens increase the per-

meability of the kidney and have a favorable influence on arterial spasm.

Zunz and Labarre[106] found that testosterone has a hyperglycemic effect after intramuscular injection. Cornil, Paillas and Rosanoff[107] reported that testosterone propionate in dogs caused marked hypoplasia of the islet tissue of the pancreas. On the other hand Lipross[108] thought injections of male sex hormones lowered the blood sugar and increased the tolerance for carbohydrate in a series of diabetic patients. Kuhlmey[109] reported that the androgens given parenterally to diabetic patients have no influence on the diabetic creatinuria or on carbohydrate metabolism.

Arndt[110] and Edwards[111] felt that testosterone propionate given over long periods of time brought improvement in patients with arteriosclerosis, thromboangiitis obliterans, angina pectoris and Raynaud's disease. Such effects are non-specific in light of our present knowledge and would appear to be difficult to evaluate. Hoffman[112] reported success in treating breast hypertrophy in adolescent boys with testosterone salts in approximately half of a series of 28 patients. Schrire and Sharpey-Schafer[113] used testosterone propionate in 100 mg. doses in one patient with acromegaly, hoping to inhibit activity of the hypophysis. The clinical effects were not stated. However, there was less creatine and creatinine in the urine of the patient during treatment. Rubinstein and Kurland[114] found that doses of five mgm. testosterone propionate three times weekly in normal males increased the sperm count and libido. Larger doses had a depressing effect on both sperm motility and libido. Weiss[115] used testosterone treatment successfully in senile psychoses of both sexes.

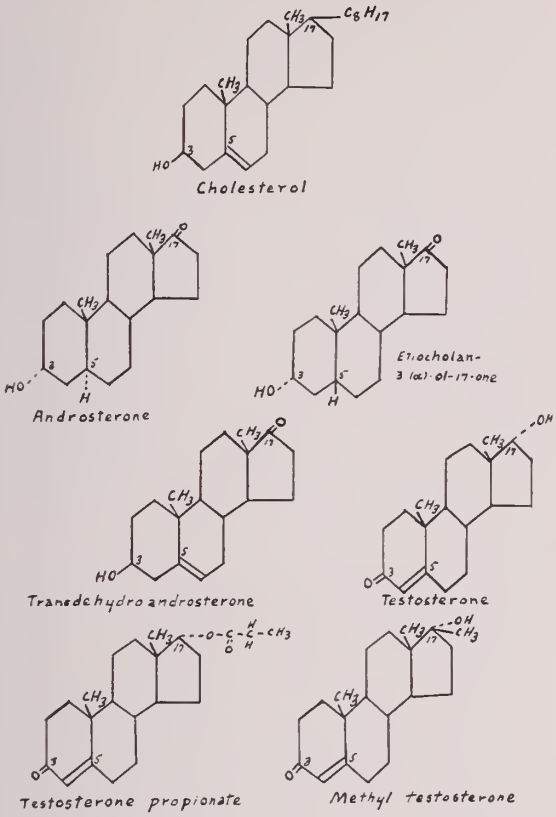
DYSMENORRHEA RELIEVED

Numerous observers have used testosterone therapy for menstrual disorders in women. Rubinstein and Abarbanel,[116] Salmon, Geist, and Walter[117] relieved dysmenorrhea by giving testosterone in but five mg. doses two or more times before the expected menstrual flows. Huffman and Bos[118] corroborated the findings of Geist[117] and others that testosterone propionate will inhibit functional uterine bleeding when given in adequate dosage. Testosterone propionate has been effective in relieving postpartum uterine pains and painful breast engorgements.[119] It is moderately effective in stopping postpartum lactation in mothers,[120] and has been used in treating chronic mastitis.[121]

FOLLICULAR MATURATION

Rubinstein[122] found that testosterone propionate inhibits follicular maturation and ovulation in rats and suggests a similar mechanism to explain the relief of excessive pain and bleeding in women under androgenic therapy. Evidence of diminution in the contractile response of the mammalian uterus (as well as a progestational response of the endometrium) under the influence of testosterone propionate has been reported by Robson.[123] Greenhill and Freed[124] have reported instances of undesirable androgenic responses in two women receiving testosterone propionate. Hair growth on the face and body, deepening of the voice, and enlargement of the clitoris were the significant evidences of virilism appearing in these patients. Similar undesirable side effects were reported by Salmon, Geist and Walter[117] in women receiving androgenic medication for dysmenorrhea. Such effects should lead to a recognition of the dangers in indiscriminate use of available potent chemically pure hormones. It is fairly axiomatic that the more effective a chemical compound is in the treatment of disease, the more significant are the undesirable reactions. The effects of these compounds in upsetting the anterior pituitary-testis relationship are profound.[125] Sperm counts in male patients may be readily depressed to the point of infertility.[101] Many suggested applications of the androgens in clinical medicine will require prolonged investigation before their wholehearted acceptance. Patients receiving androgenic therapy should be seen frequently and their clinical course followed in detail.

STRUCTURAL RELATIONS OF COMMONER ANDROGENS



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DIVERTICULUM OF THE FEMALE URETHRA WITH CALCULI

(Case Report)

By G. G. IRWIN, M. D.
Charleston, West Virginia

L. H., white female, age thirty-nine years, was referred by Dr. S. B. Souleyret to The Charleston General Hospital on May 11, 1937. Her complaint was burning pain on urination which had been present for four years. The pain seemed to be in the bladder and was intermittent. Urination occurred seven to eight times during the day and three to four times at night. There had been no hematuria but urgency was marked without loss of control except on coughing. She had been pregnant five times with no especially difficult or complicated deliveries.

The physical examination showed a healthy looking woman. The blood pressure was 140 systolic and 90 diastolic. The physical signs were essentially negative except for the presence of a hazelnut size mass on the anterior vaginal wall just below the external urinary meatus. Palpation of this mass elicited crepitus.

Urine obtained by catheter was neutral in reaction, specific gravity 1.019, showed no erythrocytes, no albumin and one to three pus cells per high power field. The blood count was normal. The Kline reaction of the blood was negative. Intravenous pyelography showed a normal upper urinary tract.

Urethrascopy was unsatisfactory because of the patient's mental condition. The external meatus accepted a No. 22 urethral bulb. The urethra was severely inflamed. Other details were not discernible.

The diagnosis was diverticulum of the urethra with multiple calculi in the diverticulum.

At operation, an elliptical incision was made about the presenting mass on the anterior vaginal wall. The diverticular sac was not adherent to the surrounding tissues and was easily separated. It was roughly two and one-half cm. in diameter. The sac was dissected to the floor of the urethra and severed there. The urethral opening was closed with plain catgut. The layers of the vaginal vault were mobilized and also closed with plain catgut. A No. 24 F. mushroom headed catheter was placed in the bladder. The laboratory report describes, "About two dozen hemp seed to pea size, faceted stones." The composition was of calcium, magnesium and ammonium phosphates.

The catheter was removed on the eighth day. A colored solution injected into the urethra showed no soiling of a sponge in the vagina. She was discharged two weeks after operation.

THE AUTHOR

Dr. Irwin, graduate University of Vermont College of Medicine; staff, Charleston General Hospital; Fellow American College of Surgeons; International College of Surgeons; Diplomate American Board of Urology.

DISCUSSION

In the older literature the distinction between diverticulum of the female urethra and urethrocele is often not clearly defined. The picture is further confused by the perhaps academic question of whether any given diverticulum is congenital or acquired. Lowsley[1] states that childbirth trauma is the most prevalent causative factor, although he also mentions back pressure from calculus with stricture and slight urinary infiltration as other possible causes. Furniss[2] believes that most cases result from infection of the urethral mucosal glands with resulting ab-

scess formation. Cysts in the urethral vaginal septum do not communicate with the urethral canal. However, trauma from childbirth and other causes conceivably could lead to intra-urethral rupture. Hinman[3] states that true congenital diverticulum cannot be distinguished from the acquired type. He states that acquired pouches result from herniation at a point of weakness caused by developmental defect, by injury, of which childbirth trauma is the most common, from back pressure from meatal stricture and from peri-urethral abscesses. Of the congenital type he postulates the ballooning effect of urine on some one of the structures which communicate by a small duct with the urethra, namely, the Lacunæ of Morgagni, cysts in dilated lymph channels, cysts of remnants of Muellerian ducts, remnants of primary excretory ducts (Gartner's Duct), and postoperative epithelial retention cysts.

In the present case, we have no evidence of back pressure from urethral stasis, nor were any of her labors such as to have left any outstanding impression in her mind. There were no congenital abnormalities of the urethra or of the genital tract. One can only speculate, therefore, as to the mechanism of the causation in this patient. The fact that the stones were numerous and faceted and composed of triple phosphates leads to the conclusion that they were not the primary cause of the urethral damage but rather resulted from stagnation of urine in the preformed diverticulum.

The occurrence of this condition is probably more frequent than is realized. Surgical treatises on the female genital tract contain but few references to it. It is mentioned by Cabot, Lowsley and Hinman while the textbooks of Keyes, Young, Kelly and Burnham and Fulkerson do not mention it. The diagnosis is made by inspection and palpation. Therapeutically, while various measures such as fulguration, irrigations, incision and drainage have been employed, it is probable that the radical removal of the diverticulum and its contents is the most satisfactory procedure. The approach through the anterior vaginal wall is usually simple. The one point in operative technique that seems essential is the same that prevails in the treatment of vesicovaginal fistulæ — mobilization of the different tissue layers.

Medical Arts Bldg.

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Hardening of Arteries

Arteriosclerosis, the hardening of the arteries which threatens all persons over 50 years old, is the vastest of all medical problems of the future as well as the most neglected, Irving S. Wright, M. D., New York, declares in *The Journal of the American Medical Association* for September 14.

With the average length of life prolonged to over 60 years, he points out, such a disease condition becomes of increasing importance. There are definite degenerative changes present somewhere in the arterial trees of practically all individuals over the age of 50, thus making possible the onset of arteriosclerosis. "Of the population over 50 years of age," Dr. Wright says, "60 per cent (15 million) will die of some cardiovascular-renal syndrome (set of symptoms referable to the heart, blood vessels and kidneys) whereas only nine per cent will die of cancer. A very large but as yet undetermined portion of that 60 per cent will die as a result of degenerative changes of the arteries, with the cardiac (heart), renal (kidney) or other syndromes merely the results of secondary ischemia (local and temporary deficiency of blood) or hemorrhage.

"As these syndromes frequently produce prolonged and painful disability before death, a change in philosophical approach might well be considered. Perhaps the mere prolongation of life should no longer be sought as the highest goal but rather longevity only to such a degree as it is compatible with happiness and a full life free from pain.

AORTIC ANEURYSM

(Case Report)

By A. C. WOOFTER, M.D. and O. B. BARKER, M.D., F.A.C.S.
Parkersburg, West Virginia

ANEURYSM of the thoracic aorta is becoming less common, so much so that the far advanced cases are almost a curiosity in private practice. This patient presented most of the signs and symptoms found near the terminal stage.

The patient was a male, age 48. The history is not entirely accurate as to time and sequence of events. About ten years ago he began to notice a shortness of breath on exertion which was constant and increasingly severe. There had been some edema of the ankles and a mild to moderate pain in the chest immediately below the right clavicle. At times a mild ache had been noted posteriorly between the spine and the right scapula, but there had been no boring pain, and no analgesic had been necessary. A cough had been present for at least the last three years, but was not "brassy" in type until the three months immediately preceding examination. The right pupil had been known to be larger than the left for approximately six years. Occasional pains were present over the precordium radiating to the left arm and hand, but these seemingly bore no relation to exertion. For one week during June, 1939, he was a patient at another hospital where he is said to have received a diagnosis of "tumor of the chest." The Wassermann at that time was two plus. Incidental findings in the history were constipation and dysuria. Previous to the present illness the patient had had measles and whooping cough; cholecystectomy and appendectomy in 1931; tonsillectomy in 1926, and a gonorrheal infection in 1916 and 1918. The wife is living and well (serology unknown); his mother died at 52 years of age of heart disease. His father died at 50, cause unknown.

Physical examination revealed a middle-aged man, weighing about 140 pounds, in bed, orthopneic, and occasionally cyanotic. The head was symmetrical without areas of softening or exostosis. The pupils were regular in contour, but markedly unequal in size, the right being at least three times the normal diameter, and not becoming miotic with morphine; the left, relatively constricted. The left pupil reacted sluggishly to light, but the right did not respond. The optic fundi were essentially normal for an individual of that age. There was an increased fullness of the right supraclavicular space and a distention of the neck veins on the left. The thorax was barrel-shaped and the left side moved more freely with respiration than the right. A few scattered râles were heard in both sides of the chest and the patient was expectorating a large amount of thick white mucus. A brassy cough was heard. An area of dullness about the size of the palm of the hand was present below the right clavicle extending to the right of the left border of the sternum. No thrill or pulsation was present over the area. Examination of the heart revealed a slightly widened left border of cardiac dullness, but the electrocardiogram showed no axis deviation. A systolic murmur was audible high over the aortic area. The right radial pulse was somewhat weak and irregular, with a loss of every third or fourth beat. The left was full and regular. Blood pressure right arm was 62/50, left arm 110/76. Inspection of the abdomen revealed gallbladder and appendectomy scars and a postoperative hernia at the umbilicus. Attempted catheterization indicated a stricture of the urethra. There was a mild edema of the extremities. Routine neurological examination was negative. Laboratory report: Urinalysis, specific gravity 1018; albumin, negative; sugar, negative. Blood: Hemoglobin, 80 per cent (Sahli); red blood cells, 4.4 million; white blood cells, 6.8 thousand. Non-protein nitrogen was 85 mg. per 100 c.c. Wassermann, four plus. Kahn, three plus. Sputum culture was

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Dr. Woofter, graduate University of Michigan School of Medicine; internist; Associate American College Physicians.

positive for streptococcus viridans and staphylococcus albus and aureus.

A posteroanterior röentgenogram of the thorax showed the heart shadow to be within normal limits. The aorta was markedly widened into an irregular shadow which occupied nearly all of the superior mediastinum. The trachea was displaced to the right. Pulmonic fields were clear. An x-ray of the spine was taken at the autopsy table.

Hospital Course: The patient had frequent attacks of severe dyspnea with cyanosis. Morphia gave moderate relief. Blood pressure readings

Applicators indicate the margin of the area of vertebral erosion. The prevertebral fascia is gone from this area. The intervertebral cartilages have resisted the erosion. (Photograph by G. S. M. Cowan, M. D.)

showed a consistent variation in the pressure in the two arms. During attacks of dyspnea the pressure was increased. The patient expired on his seventh hospital day during an attack of severe orthopnea.

At autopsy the body was that of a middle-aged white male in a fair state of nutrition. Externally the findings of interest were palpable cervical and inguinal nodes; slight prominence of the angle of Ludwig and an upper right rectus incisional scar.

Internal Examination: The intestine was slightly ballooned with gas, no adhesions were noted, no increase in peritoneal fluid and the appendix and gall-bladder were absent. The prostate was slightly and symmetrically enlarged.

On opening the thorax the lungs were pinkish grey and showed a few old fibrous adhesions. The proximal aortic arch was enlarged and a mass the size of a small grapefruit was palpated in the superior mediastinum. Further investigation of this showed it to be a large saccular aneurysm of the distal arch and proximal descending portion of the aorta. It straddled the vertebra and had to be dissected from the spine which showed marked erosion of the third, fourth, and fifth dorsal vertebral bodies leaving the intervertebral discs projecting prominently. The heart showed little abnormality except slight enlargement and dilatation of the aortic ring. The sinuses of Valsalva were somewhat narrowed. The proximal aortic arch showed irregular pearly grey raised areas and marked transverse puckering. Beyond this it showed the commencement of a large aneurysmal sac which was filled with laminated brownish grey material evidently film and blood clot. The thinned cut sides of the aneurysm were fairly adherent to the vertebra. The remainder of the tissues showed little of note in the gross.

X-ray of the Mediastinum.

Microscopic examination of the myocardium showed a slight patchy fibrosis with some intimal thickening of the smaller arteries. Lymphocytic and plasma cells were grouped about the vasa vasorum in the adventitia. The media was distended, showing areas of necrosis, loss of elastic tissue, and marked irregular fibrosis. Irregularly shaped vessels were present. The intima revealed irregular thickening with areas of degeneration and in places was difficult to differentiate from the media. Sections of the lung showed a purulent

bronchitis with a very early bronchopneumonia. Portal cirrhosis and slight passive congestion were present in the liver. Nothing outstanding could be found in the remaining tissues. The spinal fluid Wassermann taken at postmortem was positive.

This case presents a saccular aneurysm of the aorta undoubtedly due to syphilis. Cases such as these, while still occasionally seen, will undoubtedly become more rare in the future. This man's history and physical findings, while sufficient to make the diagnosis, were atypical in that little pain of the boring type was complained of in spite of the marked erosion of the vertebra. It is interesting to note that the intervertebral discs resisted the erosive effects of the aneurysm while the vertebral bodies were extensively involved.

TABULATION OF THE DIAGNOSTIC FEATURES IN THE DIFFERENTIAL DIAGNOSIS

	Cervical Rib	Neoplasm of Lung	Aortic Valve Disease	Coarctation of Aorta	Hodgkins Disease	Pulmonary Tuberculosis	Aneurism of Aorta
Difference in pulse	+ —	+ —	—	Left	— +	—	Right
Diff in blood pressure	+ —	+ —	—	Left	— +	—	Right
Cough	—	+	— +	—(+)	— +	+	+
Sputum	—	+	—	—	—	+	+ —
Murmur	—	—	+	+	—	—	+
Thrill	—	—(+)	+	+	—	—	+ —
Pupil Syndrome	+ —	— +	—	—	— +	—	+ —
Angina	—	—	— +	— +	—	—	+ —
Increased aortic dulness	—	+ —	—	— +	— +	—	+
Cardiac enlargement	—	— +	+	+	—(+)	—	—(+)
Serology	—	—	+ —	—	—	—	+
X-ray diagnostic	+	+	—(+)	+	+ —	+	+
Acid-fast sputum	—	—	—	—	—	+	—

Dilatation of the pupil on one side is more characteristic of this disease than any other. However, the pupil may become constricted with paralysis of the cervical sympathetic arc, resulting in the syndrome described originally by Horner. A murmur and thrill over the aortic area may not be present if the aneurysmal sac is filled with an organized laminated clot. Any significant difference in the pulse or blood pressure in the two arms is a very unusual finding and should lead to a suspicion of an aneurysm of the aorta. Electrocardiograms are usually of no help unless the aortic valve is involved or an embolus has entered the coronary circulation.

The history will most often be that of a progressive cardiac failure, plus a persistent, often productive chronic cough, and possibly admission of a long standing luetic infection. Generally the person is a man doing manual labor.

Fluoroscopy usually shows a mass in the upper half of the right side fo the chest, occasionally pulsating, and the diagnosis is confirmed by x-ray.

Erosion of the sternum, ribs, or vertebra is characterized by a boring type of pain near the area of pressure of the aneurysm. This patient had nothing to indicate such a process.

The prognosis in aortic aneurysm depends upon the amount of restricted activity, freedom from worry, plus the amount of specific therapy possible.

In every case of syphilis a careful examination should be made in order that any clinical cardiovascular involvement may be found and adequately treated. Murmurs, if present, should not be ignored. Negative and fluctuating Wassermann reactions are not rare in cardiovascular syphilis. By the proper application of therapy, life expectancy may be definitely prolonged. When aneurysm has developed, overenthusiasm from a therapeutic standpoint may prove disastrous. Mercury in the form of inunctions, bismuth in the form of subfascial injections, potassium iodide internally, and later arsphenamine in small doses are desirable.

Rest is not only important but absolutely essential, and activities should be definitely restricted, even after prolonged rest. Improvement is usually evidenced by the relief of such symptoms as chest pains, hoarseness, an increased sense of well-being and a gain in weight, with the ability to carry on some form of light work.

It is questionable when the myocardium is involved whether therapeutic measures show any influence on the progress of the condition or not.

A case of syphilitic aneurysm of the aorta and painless erosion of the spine is presented, along with a few interesting practical observations in regard to diagnosis and treatment.

705½ Market St.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

The Thirty-sixth Annual Meeting of the National Tuberculosis Association held in Cleveland, June 3 to 6, 1940, was characterized by a spirit of optimism based on the confidence that the control of tuberculosis is on the way of being achieved. Delegates were reminded, however, that before the goal can be reached, certain wide gaps in the program of research, case finding and the provision of treatment facilities, must be closed. There is as yet no specific cure, no dependable vaccine; chemotherapy offers scant encouragement, case finding is still too haphazard and at least 60,000 more beds for the tuberculous are needed. An excellent background for the detailed discussions which took place in the various sections on these and other subjects, was sketched by Henry D. Chadwick in his presidential address, which here appears in condensed form.

Subjugation of Tuberculosis

One of the great achievements of the twentieth century will be the subjugation of tuberculosis. We are far enough along in the campaign that started when the National Tuberculosis Association was organized 36 years ago to be quite certain that eventually victory will be won. We must not be too complaisant, however, as we are dealing with a very resourceful opponent who will take advantage of any weakening of our defenses to make a counter attack.

In the early days of the Association the stress was put upon treatment, later on prevention, then on health education and on case finding — these four together with research make up the forces that under one coordinated command are now in the field doing valiant work against the disease. Much has been accomplished. The death rate has dropped 76 per cent in 40 years. We must not be content with what has been accomplished. We have far to go before our objective is gained. Sixty thousand lives a year even now are taken by the tubercle bacillus.

The tuberculosis mortality dropped 33 per cent and 32 per cent respectively in the last two decades. Let us assume, therefore, this average decline of approximately one-third every 10 years can be maintained. In that event, the tuberculosis death rate would be 32 in 1950, 21 in 1960, 14 in 1970, and 40 years from now in 1980 a rate of nine or ten may be anticipated. The bells that ring in the year 2000 may sound the death knell of the tubercle bacillus.

The federal department of agriculture has led the way in a successful campaign to eradicate bovine tuberculosis. The success of the agriculturists is due to their persistence along one line—a direct attack on the bacillus and giving no quarter, although this involves the destruction of the host.

Our problem is more complex. We can search out the bacillus but when found we cannot destroy the carrier. We must temporize, we must educate and by slower methods of prevention try to protect others. We attempt to cure, often succeed, and so do much to limit the spread of infection. The slaughter of human beings on the pretext of affording them protection is deemed illegal, and outside of modern warfare that measure is barred. The substitute is segregation in institutions. My plea, therefore, is for more beds—one for every tuberculosis patient who should have one.

How many beds should we provide to meet this need? There are 732 institutions listed in the 1938 sanatorium directory with a capacity of 90,000 beds. This is approximately one and one-half beds per annual death. It has been shown that a minimum of two beds for each annual death are needed where a good case finding program is carried on and well equipped institutions are available. Thirteen states have exceeded this quota and four have as many as three beds per death. Far down the list are fourteen states that have not provided even one bed per death. The tuberculosis death rates in 13 of those states exceed the average for the country as a whole. The National Tuberculosis Association through its affiliated state organizations should wage a persistent campaign for more sanatoria in these states to bring them up to the minimum standard.

The number of beds needed in a state or community can be computed quite accurately by multiplying the number of annual deaths by 10 and dividing the result by four. There are 10 active cases of tuberculosis for each death and 25 per cent of them need and will accept institutional care. This has been the experience where good case finding programs are carried out and well conducted institutions are available to the patients.

(Continued on page xxxi)

President's Page

We will hear much of politics during the next six weeks. Between now and November 4, both major political parties will extend every effort to rally their followers to victory. Candidates will be in a receptive mood. This is an excellent time for county medical societies to officially contact their candidates to the state legislature and discuss issues of vital importance to the medical profession and the public.

A short time ago I sent a bulletin to every county secretary in the state asking for the appointment of a legislative committee in each county medical society. I hope this request has been carried out and that the names of the various county committees have been sent in to the Association headquarters office in Charleston. These county committees can function effectively during the remainder of the campaign in acquainting legislative candidates with the problems of organized medicine. They can continue to function effectively when the legislature convenes in January by utilizing the contacts made during the present campaign.

It should be made clear that the organized medical profession of West Virginia has no legislative questionnaires to fill out and no legislative pledges to sign. We are vitally interested in any phase of state legislation pointing toward state or socialized medicine, our county legislative committees should not lose the opportunity of bringing our opposition forcefully to the attention of their respective legislative candidates. Other legislative concerns of the Association include registration of hospitals and proper safeguards for the sale of the barbiturates. Full information on these problems will be sent out by the State Committee to the county legislative committees.

Let us all get behind this legislative movement between now and election day and make our wishes known to the candidates of both parties. Let us exclude partisanship from our legislative consideration and support those candidates, regardless of party, who stand for and represent the American Way.

As this page is being written, the president has just signed the Selective Service Draft Act. Although the American medical profession is under federal indictment, we doubt if any profession in any period of emergency has displayed the patriotic loyalty of the doctors. Already more than 65 per cent of American physicians are duly registered for mobilization on a voluntary basis. Long before the draft act was passed by either house, doctors had been selected for the draft boards in West Virginia's 55 counties. When the American Medical Association goes on trial in Washington on October 21, the mobilization of the medical profession should be complete. However, we assume that Mr. Thurmond Arnold and his assistants will defer their own enlistments until after the A. M. A. is properly prosecuted.

To those West Virginia doctors who have not yet filled out and returned the medical preparedness questionnaires, won't you please do so at once. Additional copies may be secured from the Association headquarters office in Charleston.

Frank V. Langfitt

President.

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THE DRAFT IN WEST VIRGINIA

Many doctors are writing in about the draft. Young physicians want to know how the draft will affect them. Hospital superintendents want to know if the government is going to take their internes and residents. In an effort to get some first hand information we talked to Dr. Luther Rush Lambert, now Major Lambert. He is in charge of the medical division of the selective service act for West Virginia, with headquarters in Charleston.

Major Lambert's first big problem is to provide one competent physician for each draft board in West Virginia. There will be one board for each 30,000 population, which means approximately 90 boards and 90 doctors. In addition there will be a medical advisory board for each county appointed by the president. The draft board doctors will examine the draftees. The medical advisory board will be the appeal board for any draftee who feels he did not get a square deal from his draft board doctor. All these jobs are honorary. There will be no pay for the draft board doctors, the members of the draft boards, registrars, or anyone else connected with the draft program except clerical help. The positions will be patriotic and influential, but not remunerative.

There will probably be 6,000 West Virginians conscripted in the first draft. Doctors want to know what will happen to them if they are conscripted. Will their talents be properly utilized, or will they be sent out to dig latrines? Will they get commissions or be buck privates? Should a doctor enlist now in order to get a commission, or should he wait until he is drafted and take a chance? These are questions that we discussed with Major Lambert.

There is no provision in the selective service act that will guarantee a commission to a conscripted physician. However, the entire act is predicated on the assumption that every man will be placed where he can serve best. Dr. Lambert feels that the government would not squander the talents of a physician by putting him on kitchen police. He said that a conscripted doctor or dentist would be commissioned just as soon as they could be properly placed, but they would have to remain as buck privates if no medical or dental openings were available. We asked Major Lambert if a doctor would be better off to enlist now or to wait until he was conscripted. Major Lambert thought this one over and declined to offer any advice, as he was not sure.

After our conference with Major Lambert we conferred with Dr. B. H. Swint of Charleston, state medical preparedness chairman, who is just back from a meeting of state chairmen at the A. M. A. headquarters in Chicago. Dr. Swint was able to throw a lot more light on the subject, as his information was brand new. For example, he advised all doctors of draft age to get their commissions as soon as possible, instead of waiting for the draft. That is the A. M. A. slant, Dr. Swint said.

Dr. Swint also had the answer to the question about internes, residents and medical students. He said they would all be exempted from the selective service draft bill, but would be called as soon as their periods of interneship or residency were completed. Those now in service as either students, internes or residents are exempt as such. Doctors holding public health positions are also exempt.

We talked to Dr. Swint about dozens of draft problems. He said the physical examination given by the draft board physician would be just the same as the regular army examination. Draft board physicians are not members of the draft boards.

When prospective draftees are examined, the doctor gives them one of the following three ratings:

A. Fit for full military service.

B-1. Fit for limited military service.

E-3. Not fit for any military service.

We asked Dr. Swint why they did not use A, B and C, instead of A, B-1 and E-3. He did not know. He just took it down the way they gave it to him and, being an old soldier himself, he did not ask any questions.

Lots of medical reserve officers have recently been called to the colors; many young physicians leaving hard-earned private practices behind. Reserve officers below the rank of captain, if they have dependents, may resign within 20 days after being called.

After things get pretty well under way, Dr. Swint said the various state and component county medical societies would largely control the voluntary enlistment of physicians. Doctors in key positions will not be allowed to enlist without Association permission. State and county medical societies will be responsible to the civilian population to see that no populated areas are depleted of physicians.

We asked Dr. Swint about the personnel for county medical advisory boards. He said they would be composed of an internist, opthalmologist, otolaryngologist, surgeon, orthopedist, radiologist, neuropsychiatrist and dentist. We asked Dr. Swint what about Wirt county where they only have two doctors, one of whom is Dr. Coplin, the sheriff. Dr. Swint said we would just have to work those things out as we came to them. He said only Doctors of Medicine would be selected as local examiners or on the advisory boards.

Fifty-five per cent of the West Virginia doctors have returned their medical preparedness questionnaires, Dr. Swint said. Doctors who fail to send in these questionnaires will probably have to shift for themselves if they have any misunderstanding with the military authorities. Dr. Swint said the meeting in Chicago was a success and that the American Medical Association was on the job.

WRITING YOUR LAWMAKER

Bruce Barton, congressman and advertising executive, has an article in the September *Reader's Digest* on "How to Write Your Congressman." It is a highly interesting and practical discussion of the influence of public opinion when properly utilized. With the ever present threat of socialized medicine before us, the Barton article could easily serve as a political text-book for physicians who are individually interested in preserving the American system of practice.

Mr. Barton, who should know from his own experience, says that a congressman spends more time reading and replying to his correspondence than in any other part of his work. Congressmen rely on their mail for support and guidance. They gather courage from their mail to withstand pressure from the administration or from organized groups. A congressman deprived of his mail would find himself isolated from one of his most important sources of information and help.

Let us see what Mr. Barton has to say about the kind of letters one should write their congressman. "Usually," he writes, "the communication which does the most good is not the long and pompous treatise, but the brief forceful note reflecting an individual's firm conviction. * * * Most of all, you are influential when you ask your congressman to vote 'yes' or 'no' on a bill in committee or before the House. Your request should be accompanied by enough logic to show that it is your own idea. * * * Congressmen know that only the voter who sits down and expresses his feelings in his own

language will remember them on election day."

Here are some of the valuable observations in the Barton article:

"State concisely what you want and why. If you don't know, don't write."

"No congressman is fooled by a mimeographed release from a national organization."

"Petitions, once potent, have relatively little influence today."

"Registering a letter or putting a special delivery stamp on it is usually a waste of money."

"Telegrams cost more than letters, but are less, rather than more effective."

Mr. Barton closed his article with a quotation from Senator Vandenberg, who said, "When citizens take enough interest to write to their lawmakers and feel free to speak their minds, and when their lawmakers scrupulously reply, faith in democratic government is established."

We commend Congressman Barton's treatise to the members of the West Virginia State Medical Association. His points apply to our own state legislators as well as to our representatives in the nation's capitol.

STRAUSS NOT LICENSED

In the late spring a man giving the name Dr .S. S. Strauss, appeared at the Association headquarters and requested relief work. He said he was a 1938 graduate of the Long Island Medical College and that he was licensed to practice in West Virginia. "Dr." Strauss claimed he was a widower with a small son, that he was on his way to Wisconsin to visit his wife's people, and that he would return in two weeks to consult further about relief work.

A few days later an inquiry was received from McDowell county advising that Strauss had been doing relief work there and wanting to know whether or not Strauss was licensed to practice in this state. Having been advised by the State Health Department that Strauss was not licensed, a letter was dispatched immediately to Dr. J. A. Curran, dean of the Long Island Medical College. He replied that S. S. Strauss was not a graduate of the college and that the college had no record of any individual of that name ever being a student. This information was imparted to the American Medical Association and to the McDowell Society. The doctors in McDowell were asked to keep on the lookout for Strauss.

Several weeks later the Association was advised that Strauss was practicing in Mingo county. A letter was dispatched to the Mingo county secretary, Dr. George Easley, to see if Strauss could be located there. Several days later Dr. Easley replied that Strauss had been located, fired, and run out of the county.

Nothing further was heard of Strauss until the White Sulphur Springs meeting. There it was discovered quite by accident that Strauss was relieving a Logan county physician who was attending the convention. Before any action could be attempted against Strauss, he again disappeared and has not been heard from since.

This is just a note to request that Association members keep a sharp eye out for Strauss and notify the Association headquarters in Charleston if the gentleman should be located.

Medical Regiment

"The First Medical Regiment, which for eighteen years had been stationed at the Field Service School at Carlisle Barracks, Pa., arrived in Camp Ord, California, June 28, after having marched 3,102 miles in fourteen days," *The Journal of the American Medical Association* for September 21 reports in its Medical Preparedness Section. "The regiment averaged more than 250 miles each marching day and on some days made more than 300 miles. Almost the entire distance was made over U. S. Highway 40, although U. S. Highway 30 was followed through the mountains. The regiment consisted of seven officers of the medical corps and 180 enlisted men under the command of Lieut. Col. Robert P. Williams.

General News

Southern Medical Association

The thirty-fourth annual meeting of the Southern Medical Association will be held at Louisville, Kentucky on November 12-15, 1940. Headquarters will be established at the Brown and Kentucky hotels. Requests for hotel reservations should be addressed to Hotel Committee, Southern Medical Association, Dr. James H. Pritchett, Chairman, Room 413, 421 West Market Street, Louisville, Ky.

In general the program this year will follow the pattern of recent sessions. The first day, Tuesday, will be given over to the Louisville doctors who will present a program of short clinical presentations. From Wednesday through Friday the 19 sections of the Association and the three conjoint meetings will be in session.

International Assembly

This year's International Assembly of the Interstate Postgraduate Medical Association of North America will be held in the Public Auditorium, Cleveland, Ohio, October 14, 15, 16, 17 and 18. The Academy of Medicine of Cleveland and the Cuyahoga County Medical Society will be host to the Assembly.

The officers of the Interstate Postgraduate Medical Association, those of the Academy of Medicine of Cleveland and the Cuyahoga County Medical Society, and the Ohio State Medical Association, extend a very cordial invitation to all members of the profession in good standing to attend the Assembly.

The members of the profession are urged to bring their ladies with them as a very excellent program is being arranged for their benefit by the ladies' committee.

A full program of scientific and clinical sessions will take place each day and evening of the Assembly, starting at 8:00 o'clock in the morning.

A most excellent opportunity for an intensive week of postgraduate medical instruction is offered by eighty distinguished teachers and clinicians from different parts of the United States and Canada who are honoring the Assembly by contributing to the program. The speakers and subjects have been carefully selected by the program committee.

Preassembly and postassembly clinics will be conducted, free of charge, in the Cleveland hospitals on the Saturdays previous and following the Assembly for visiting members of the profession.

Excellent scientific and commercial exhibits of great interest to the medical profession will be an important part of the Assembly. These exhibits will be open to members of the medical profession in good standing without paying the registration fee.

The registration fee for the scientific and clinical sessions will be $5.00.

With a great deal of pride and satisfaction, we call your attention to the list of distinguished teachers and clinicians who are to take part on the program and whose names appeared on page xv of the advertising section of the September JOURNAL.

Medical College of Virginia Alumni Meeting

The West Virginia alumni of the Medical College of Virginia will gather in Charleston on the evening of October 3 for their annual reunion. The meeting will be held at the Ruffner Hotel and will be preceded by a dinner at 7:30 o'clock. An attendance of approximately 100 is anticipated.

The speaker of the evening will be Dr. William T. Sanger, president of the Medical College of Virginia. He will probably be accompanied by other faculty members. Dr. Sanger plans to show pictures of recent college activities. The meeting is in charge of Dr. A. P. Hudgins, Professional Building, Charleston. Dr. Hudgins is secretary of the alumni group.

Coal Company Sued

Dr. George P. Naum of Cedar Grove, West Virginia, has recently entered suit against the Kelley's Creek Colliery Company, in the Circuit Court of Kanawha county, seeking to restrain the company from practicing medicine without a license. Dr. Naum has also entered a companion suit to recover money which he claimed the company withheld from him while he was employed as company doctor, from 1932 to March 1, 1940.

The West Virginia State Medical Association, acting under instructions of the Council at White Sulphur Springs, has entered the injunction suit with Dr. Naum and is represented by Mr. Ben Moore of Charleston, the Association's attorney. Mr. Moore has just furnished the Association with the Bill of Complaint which was filed on September 25.

In the Bill of Complaint Dr. Naum alleges that the defendant corporation employs a large number of workmen out of whose wages for each half-

monthly period, the defendant collects by means of a uniform check-off system stated sums for medical and surgical services to these employees and members of their families. Dr. Naum states that he was employed by the defendant in 1932 as company physician at Ward, West Virginia, and for a while was paid a stated salary which was less than the total amount of the check-off for medical and surgical services, the balance being retained by the defendant company.

In the year 1933 the defendant, having been engaged in litigation sponsored by the Association and questioning their right to profit from collections made from their employees, "changed their method of compensating the plaintiff as a company physician and thereafter purported to turn over to the plaintiff and his assistant the entire amount of check-off collected by them for such purpose less a stated sum which the defendants deducted from the check-off and kept for themselves. This sum amounted to $250.00 per month for approximately three years, when it was raised to $300.00 per month, and the defendants continued to keep for themselves said sum of $300.00 per month out of the medical and surgical check-off until the 1st day of March, 1940, at which time plaintiff ceased to be company physician for the defendants."

Dr. Naum's bill of complaint further alleges that when he ceased to be the company physician, the coal company approached certain other physicians and proposed to them that they take the work of company physician for the defendant and accept for their services a sum per month considerably lower than the total amount of the check-off, so that the coal company could continue to retain a portion of the check-off for themselves. Dr. Naum claims that several physicians so approached declined to work under such conditions, following which the defendant secured the services of two other physicians who are serving as company doctors for the coal company.

The bill of complaint expresses the belief that the physicians now practicing as company doctors for the defendant are being paid a compensation which is considerably less than the total amount of the check-off now being collected by the defendants from their employees, for medical and surgical services, and that the coal company is still withholding for itself a substantial part of the check-off.

On behalf of himself as a physician engaged in the practice of his profession in the same community, and on behalf of all other physicians similarly situated, Dr. Naum asks for an injunction against the defendant prohibiting them from unlawfully engaging in the practice of medicine and surgery.

American Board of Obstetrics

The written examination and review of case histories (Part I) for Group B candidates of the American Board of Obstetrics and Gynecology, will be held in the various cities of the United States and Canada on Saturday, January 4, 1941, at 2:00 p. m. Formal notice of the place of examination will be sent each candidate several weeks in advance of the examination date. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held in June, 1941.

Candidates for re-examination in Part I (written paper and submission of case histories) must request such re-examination by writing the secretary's office not later than November 15, 1940. Candidates who are required to take re-examination must do so before the expiration of three years from the date of their original examination.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire board, meeting at Cleveland, Ohio, in June, 1941, immediately prior to the annual meeting of the American Medical Association.

Tuberculosis Association Officers

The West Virginia Tuberculosis and Health Association convened at Clarksburg on September 19, with more than one hundred members in attendance. New officers elected were:

Dr. Leo H. Mynes, Charleston, president; Dr. George Evans, Clarksburg, vice president; Mr. Robert Hawkins, Charleston, secretary; Mr. Glenn Edgar, Charleston, treasurer.

Mr. E. P. Wells, field agent for the Association, was appointed acting executive secretary, to fill the vacancy caused by the death of Mr. George C. Rowell of Charleston.

The tuberculosis disease rate of medical and nursing personnel in modern tuberculosis sanatoria is generally lower than in hosptials not having a properly supervised tuberculosis department.

County Society News

Barbour-Randolph-Tucker

The Barbour-Randolph-Tucker County Medical Society held its first fall meeting at the Randolph Hotel in Elkins on September 12 with an excellent attendance of members and guests. The gathering was featured socially by luncheon and a golf tournament at the Elkins Country Club during the afternoon. Dinner was served at the Hotel Randolph prior to the scientific program.

The guest speakers of the evening were Dr. R. Franklin Carter of New York City and Dr. R. J. Wilkinson, Huntington. Dr. Carter gave a highly interesting talk on "The Functional Gall-Bladder." Dr. Wilkinson presented moving pictures. This was a fine program that was highly appreciated by the members and guests in attendance.

GUY H. MICHAEL, *Secretary.*

Cabell County

Dr. Ralph M. Caulk of the Merritt-Christie Clinic, Washington, D. C., was the guest speaker at the September 12 meeting of the Cabell County Medical Society which was held at the Governor Cabell Hotel, Huntington. Dr. Caulk addressed the society on "Preoperative Irradiation as a Diagnostic and Therapeutic Guide."

Dr. Frank C. Hodges, Huntington, presented a highly interesting case of "Arachnoidism."

Dr. C. I. Taylor was host to the society members and their wives on Friday afternoon, September 13, at the Huntington State Hospital farm near Barboursville.

JAY L. HUTCHINSON, *Secretary.*

Eastern Panhandle

The regular quarterly meeting of the Eastern Panhandle Medical Society was held at Martinsburg on the evening of September 11 with Dr. Everett Homer Dickinson, Associate Professor of Surgery, Hahnemann Medical College, Philadelphia, as the guest speaker. He gave a very interesting paper on "Head Injuries and Their Management."

M. H. PORTERFIELD, *Secretary.*

Fayette County

The next regular meeting of the Fayette County Medical Society will be held on Tuesday evening, October 15, with Dr. Guy W. Leadbetter of Washington, D. C., as the guest speaker. He will present a program on the practical consideration of traumatic low back pain and members of neighboring societies are cordially invited to attend. The meeting will be called to order at eight o'clock at Conley Hall, Montgomery.

R. A. UPDIKE, *President.*

Kanawha Medical Society

Dr. Walter I. Lillie, Professor of Ophthalmology at Temple University Medical School, was the guest speaker at the September 10 meeting of the Kanawha Medical Society which was held at the Daniel Boone Hotel, Charleston. He discussed the eyeground findings in systemic disease and also projected some very fine photographs of the fundus oculi, which had much practical value. The scientific meeting was preceded by a dinner at 6:30 o'clock.

New members accepted by the society after the usual six months waiting period were Dr. A. W. DeBell, Malden; Dr. W. L. Hardesty, Charleston; Dr. C. L. Houch, Carbon; Dr. C. A. Harper, Clendenin, and Dr. H. G. Nester, Cedar Grove.

W. A. THORNHILL, *Secretary.*

Logan County

The Logan County Medical Society held its regular meeting at the Aracoma Hotel, Logan, on the evening of September 11. Two films, "The Biology of Conception", and "The Mechanism of Contraception" were presented. During the business session Dr. DeWitt T. Bond, Amherstdale, was elected to membership.

A joint meeting and dinner with the Logan County Dental Society is scheduled for October 10. Dr. E. C. Hume, oral surgeon of Louisville, will be the speaker. Members in neighboring counties are invited to attend.

J. W. CARNEY, *Secretary.*

Mercer County

The regular monthly meeting of the Mercer County Medical Society was held at Bluefield on the evening of September 19 with Dr. Frank V. Langfitt, Clarksburg, president of the West Virginia State Medical Association, as the speaker. Dr. Langfitt spoke on the general subject of medical economics and viewed with alarm the present trend toward socialized medicine. He pointed to the failure of this system of practice in European

countries and urged the profession to make its opposition felt during the present political campaign.

FRANK J. HOLROYD, *Secretary*.

Raleigh County

Dr. Robert King Buford, president-elect of the West Virginia State Medical Association, was the guest speaker at the September 19 meeting of the Raleigh County Medical Society, which was held at the Swan restaurant in Beckley. Dinner was served at 6:30 o'clock, preceding the business and scientific session.

Dr. Buford spoke on economic problems confronting the medical profession in West Virginia and particularly the problems of industrial medicine in the southern coal fields. His address was discussed at length by the members in attendance.

In addition to Dr. Buford, visitors included Dr. W. P. Bittinger of Fayette county and Mr. Joe W. Savage, state secretary.

E. N. DUPUY, *Secretary*.

Lead Poisoning

Early operation (surgical decompression) to diminish the increased pressure within the skull in lead poisoning of brain tissue is recommended as a means not only of preserving life and vision but also of preventing harmful after effects of the poisoning, by W. Tracy Haverfield, M.D., Paul C. Bucy, M.D., and Anna S. Elonen, M.A., Chicago, in *The Journal of the American Medical Association* for June 22.

Two of five children with the disease whose cases are reported by them, died. "One," they state, "might possibly have been saved had a general rather than a local anesthetic been used. The other was far too ill when first seen to have been benefited by any form of therapy. The three who survived," they continue, "have been followed since the operations for three, five and seven years. Two are physically, neurologically (pertaining to the nervous system) and mentally normal . One is physically in perfect health but is mentally somewhat below his twin brother (not identical twin). However, he has surpassed his twin brother in physical development.

"Surgical decompression effectively relieves the symptoms of pressure, preserves life and vision and prevents the development of sequelae (such as mental retardation, paralyses and tremor) if the treatment is not too long delayed."

Obituaries

Doctor W. T. Highberger

Dr. William Thomas Highberger, 81 years of age, died at his home in Maysville, Grant county, on September 6, following a long illness. He was in active practice at Maysville for more than 50 years, until failing eyesight forced his retirement several years ago.

Dr. Highberger was born at Sharpsburg, Maryland, received his premedical education at Shepherd College, and graduated from Maryland Medical College in 1883. In addition to his duties as a physician, the deceased was active in church and civic affairs. He organized the first Sunday School in Maysville in 1890 and served as its superintendent until his death. In 1938, shortly after his retirement from active practice, he was elected an honorary life member of the West Virginia State Medical Association.

Dr. Highberger was a life-long Democrat. Perhaps the greatest tribute to his popularity as a trusted family physician came several years ago when he was elected sheriff of the rock-ribbed Republican county of Grant.

Two sisters and one brother, Dr. Robert L. Highberger of Sharpsburg, survive.

Doctor Lawson S. Henley

Dr. Lawson Silas Henley, 68 years of age, died following a brief illness at Huntington on September 16, 1940. Dr. Henley's home was in Huntington, although he maintained an office at West Hamlin and did a large amount of locum tenens work in the southern coal fields.

Dr. Henley was born at Fayetteville, attended Marshall College, and was graduated from the University of Louisville School of Medicine in 1905. He practiced for many years at Kayford in Kanawha county, and later at Borderland in Mingo county, where he served as president of the Mingo County Medical Society.

The individual physician must protect the families in his care, and through them the community, by urging physical examination of domestic employees. Repeated emphasis on the necessity of this should result in the earlier diagnosis of tuberculosis and in the prevention of exposure to infants and children from this source of infection.

BOOK REVIEWS

Physical Diagnosis

Elmer and Rose Physical Diagnosis. Revised by Harry Walker, M. D., F. A. C. P., Associate Professor of Medicine, Medical College of Virginia, Richmond, Virginia. Pp. 792, 295 illustrations. Eighth edition, St. Louis. The C. V. Mosby Company, 1940. Price $8.75.

Without familiarity with the seven editions of this work which appeared 1917 to 1935, the present improvement cannot be properly evaluated. Dr. Walker's revision shows that even in the field of physical examination change is the order of the day, and that many of the standard procedures of the past are yielding place to more exact diagnostic aides. The work includes those signs whose value has been proven during the interval since the last edition and those that have been replaced by more exact laboratory examinations, assigning to each its proper value. The examining physician must be familiar with both the relevant and the irrelevant to appraise accurately the assembled information.

The book includes a survey of the patient as an entity and not as an unrelated assembly of organs. It is arranged in the order in which a physical examination is made. It is intended primarily as a guide to teaching physical diagnosis to medical students and is well adapted to its purpose. As a reference work for the practitioner it will be found too abbreviated.

There are several statements and a number of illustrations that might be deleted without loss. Electrocardiographic reproductions could be clearer. The use of pale green paper instead of the usual white adds to facility of reading.

W. A. THORNHILL.

Breathe Freely

Breathe Freely! The Truth About Poison Gas, by James Kendall, M. A., D. Sc., F. R. S., Professor of Chemistry, University of Edinburgh, formerly Lieutenant-Commander in the United States Naval Reserve and liaison officer with allied services on chemical warfare. Published by D. Appleton - Century Company, Inc., New York and London, 1938. 179 pp.

The author is by profession and experience well qualified to write on the problems of gas warfare. He presents strong evidence that there is no need for panic when poison gas is employed as a weapon against civilians in warfare. The information is well arranged and the book is easy to read. A highly technical matter is treated in such a manner as to be readily understood by the average person not skilled in chemistry or in the problems of human behavior. It can be recommended to all classes of readers. It is particularly desirable that it be read by those responsible for molding public opinion and by those who are community leaders. While no brief is carried for chemical warfare, and while the author, as he states, believes that chemical warfare is a crime against civilization, he is to be commended for his efforts to "debunk" the horrible poison gas myths of H. G. Wells, Bertrand Russell and other sensationalists who sacrifice fact for effect. The author undertook this somewhat difficult task as he says in his foreword "purely from a sense of national duty", with no axe to grind and with no responsibility to any political party.

"Perhaps the most outstanding of all post war developments is the unusual dread of the future potentialities of chemical warfare that has disseminated over the whole civilized world. The danger of fear, of course, is that it may lead ultimately to panic, and panic is really the only thing we have to fear * * *. The reason is perfectly simple. It is the instinctive dread and dislike of mankind for what is novel, what is mysterious, what is unknown. It is the fright and hatred of ignorance.

"The greatest danger of poison gas is the fear which it arouses and the fear of poison gas can best be countered by telling the plain truth about it. To get the plain truth directly and effectively into the minds of the public at large is difficult, since it can hardly be presented in a popular manner, and it demands a little more knowledge of chemistry than the man in the street possesses."

The author discusses the rôle played by the sensationalist, by the ultrapacifist, and by the military expert in promoting fear for poison gas. He gives examples of how they have exploited the potentialities of chemical agents and how grotesquely they have exaggerated the horrors without any attempt to appreciate the well-known limitations of these same agents.

"Practically every chemical expert who has written on the subject is an anti-alarmist on poison gas which omits all the expected horrors is not news, and so never gets into the popular press ***." The author quotes frequently from such recognized authorities on chemical warfare agents as Professor

J. B. S. Haldane, Mr. F. N. Pickett, General Gilchrist, M. C., C. W. S., U. S. A. and Lieutenant Colonel A. M. Prentiss, C. W. S., U. S. A.

The gases used in the last war are discussed in non-technical language. There is a brief, readily understood resumé of the significant properties of these agents, of their use, their individual virtues and their individual limitations.

Of particular interest to the average citizen should be his discussion of chemical warfare agents and their relation to (1) the degree of suffering caused by them compared with that produced by other weapons, (2) the percentage of deaths caused by them, and (3) the occurrence of permanent after effects.

Poison gas did not turn out to be the "mass murder agency, par excellence", it is so popularly pictured. While permanent after effects from even mustard gas were almost negligible, its casual effect was shown to be five times that of projectiles, high explosive and shrapnel. Emphasis is placed on the findings of General Gilchrist to show that war gases positively did not increase the incidence of tuberculosis among those who were "gassed."

Quoting from Colonel Prentiss: "If a man who is gassed survives the war, he comes out body whole, as God made him, and not the legless, armless, or deformed cripple produced by the mangling and rending effects of high explosives, gunshot wounds and bayonet thrusts. * * * Chemical warfare is the most human method of warfare yet devised by war." That a super gas has been developed or ever will be developed he clearly indicates is unlikely. In this connection, "Myths of this type are repeated daily and grow in the course of repetition. It is time now to explode them, so that the public may realize that the fear they induce is wholly unwarranted."

A proper knowledge of the possibilities and limitations of war gases and a proper gas discipline with the necessary gas protection equipment will effectively rob chemical warfare, even upon civilians, of its dangerous sting, and its horrors will be experienced only in proportion to the degree to which these requisites to protection and preparedness are lacking.

The author points out that adequate means of defense can always be effected for protection against chemical offense, and that research chemists have done more to perfect gas defense against chemicals than they have done in the development of new gases.

The likelihood of the abolition of gas from warfare is discussed and the author states that he definitely believes that it is improbable that the use of poison gases will be resumed by belligerents in the event of another European war. He intimates that fear of retaliation will be a powerful deterrent against its use. "This does not mean, of course, that any nation will be free to relinquish preparations for chemical warfare, either defensive or offensive. Any country foolish enough to do so would be doomed; unilateral disarmament, is certain ruin."

The possibilities of defense in a gas attack on London are discussed and then the matter of gas proof rooms. In referring to the British Air Raid Precaution Hand Book, he says, "The gas precaution schemes of the government, in general, are not only adequate but more than adequate." His only criticism is that they may have presented the situation so frankly and so much in detail that the public may be induced to exaggerate the total danger.

The discussion of precautions for small children is interesting and helpful.

The author indicates how much more havoc can be wrought in air raids by the use of high explosive and incendiary agents than by chemical agents.

On the whole, the book goes far to give the reader a sane idea of the potentialities and limitations of chemical warfare agents when used as a weapon against either civilians or armed forces.

—G. M. L.

Gas in the Next War

"Gas in the Next War" by Major-General Sir Henry Thuillier, K. C. B., C. M. G., D. S. O., Goeffrey Bles, London, W. I. 1939. 180 pages. One of a series on "The Next War", edited by Captain Liddell Hart.

"In the public mind there is great dread of attack with gas, which is generally believed to exceed in murderous efficiency all other modes of attack, and to be one against which it is impossible to guard. Fear, which may lead to panic, can be avoided by a full knowledge of the facts. This book is designed to give that knowledge." (Thuillier, p. 2).

Reliable information is attractively presented. The style is such as makes reading pleasurable.

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The presentation is not technical and can be readily understood by the average person who is not versed in problems of chemistry or of warfare. The author is well qualified for his task. During the World War he was director of Gas Services at G. H. Q., and later controller of Chemical Warfare at the Ministry of Munitions.

In his opinion, gas warfare is not as inhuman in character as it has been depicted, particularly when compared with other weapons. The vulnerability to gas attack of both civilian and soldier when properly equipped and trained has been greatly exaggerated. He is convinced of the folly of unpreparedness or of relying on the abolition of gas warfare by international agreement. Besides discussing briefly the various gases of importance, he takes up the industrial background necessary for chemical offense and stresses the enormous importance of surprise and ruse in gas strategy.

After a brief historical consideration, he deals with the use of gas in the last war and attempts to build up some idea of how it may be used in a future war. This speculation is built upon knowledge gained from its use, and the circumstances of its use, in the World War. He discusses the possibility of gas attack from the air against troops and civil populations, and the measures of defense to be employed against such attacks.

The book should be read by all who may be called upon to serve in the armed forces, as well as by those who will be leaders of civilians in event of hostilities. There is no book in English written in terms which the average citizen can understand which will give the person unacquainted with the problems of chemical warfare quite as good a general survey of the entire picture of gas offense and defense, of the potentialities and limitations of such, etc., as will this splendid book of General Thuillier.

—G. M. L.

Dreams

The greatest amount of dreaming is done by persons who are between 20 and 25 years old, Doris W. McCray, Cedar Rapids, Iowa, states in *Hygeia, The Health Magazine.* Dreams increase with the variety and activity of the individual's intellectual life. Students report the heightened frequency of dreams during examinations and intensive school work. Dreaming decreases with age. A dream seldom lasts more than ten minutes.

TWENTY-FIVE YEARS AGO

(Taken from the October, 1915 Journal)

Scientific articles appearing in the October, 1915 JOURNAL were by Drs. Samuel G. Gant, New York; G. A. Aschman, Wheeling; C. S. Hoffman, Keyser; E. B. Gerlach, Huntington.

* * * *

The West Virginia Hospital Association held an interesting and enthusiastic meeting in Charleston, September 21, 1915. Constitution and by-laws were drafted and adopted, and the following officers were elected: President, Dr. G. C. Schoolfield; vice presidents, Dr. B. B. Wheeler, Dr. A. K. Kessler, Dr. R. E. Vickers; executive committee, Dr. O. O. Cooper, Dr. G. C. Rogers, Dr. W. A. McMillan; secretary-treasurer, Dr. W. H. St. Clair.

Those present at the meeting will not soon forget the royal reception and entertainment by the Charleston doctors. After the afternoon session, they had arranged a progressive five-station dinner. We were first driven to the St. Francis Hospital for first course, then successively to Dr. Schoolfield's residence, Dr. McMillan's hospital, Charleston General Hospital, and Dr. MacQueen's hospital, for dessert. This was a novel plan and was thoroughly enjoyed, the ride between courses giving us greater capacity for the elegant menu.

* * * *

Quarantine officers have been warned to watch travel from the Greek, Italian and Holland ports with a view to the detection of active cases of cholera and cholera carriers. With the cessation of hostilities in Europe there is every indication that the work and responsibilities of the quarantine system of the United States Public Health will be increased greatly.

* * * *

The first issue of the *Journal of Laboratory and Clinical Medicine* will be published the first of October. The *Journal* has an editorial staff that represents the best medical thought in America at the present time. Its endeavor will be to supply the worker in the field with such scientific and practical knowledge on scientific medicine as he can apply in his daily work.

Woman's Auxiliary

President's Message

Delivered by Mrs. H. V. Thomas, Clarksburg, Auxiliary President, at the White Sulphur Springs Meeting, July 30, 1940.

The gavel which came into my keeping at our annual meeting is a symbol of your confidence in me to continue with the work of the Auxiliary through the coming year. Great privileges beget great responsibilities, and I pledge to you my best efforts, my time, my thought.

With your confidence in me and with my faith in you who make up the Auxiliary, I look forward to a year characterized by service and progress. Our progress, however, is largely dependent on the intelligence and the ability of our committee chairmen. These chairmen receive suggestions and plans from the national chairmen and, in turn, make suggestions and plans for the counties' guidance. When knowledge is lacking, progress is retarded. The indispensable tools for intelligent, purposeful Auxiliary planning are the "Handbook" and the "*Bulletin.*" I urge that every active member make these booklets her own and familiarize herself with them.

In the organization of the Auxiliary, the fundamental unit is the county; above it is the state; above the state is the national group. The function of the state is to coordinate the activities of the different counties—to keep them from working at cross-purposes . The county Auxiliaries are the real work units, and it is on them that the welfare of the organization depends. Each member of each county Auxiliary must carry in her heart the truth that she is a part of a unified whole which can either be helped or hindered by her. Each makes her contribution to the final achievements of this group. Because of this fact, our leaders and advisers stress the project of self-education in matters pertaining to individual and public health.

Five years ago, two hundred and thirty-five women belonged to the West Virginia Auxiliary. This year there were four hundred paid memberships. In the twelve organized counties there are now about three hundred doctors' wives who have not accepted the Auxiliary membership for which they are eligible. Throughout the state there are approximately seven hundred eligible non-members. It is my hope that during the coming year the membership of this organization be greatly augmented. There are still many doctors and doctors' wives who ask: "What is the purpose of the Auxiliary?" The answer to this question lies not in membership campaigns, but in increased activity. I believe that significant gains in our membership will result from increased activity and greater usefulness of our organization.

In all our activities, let us bear in mind that we are an auxiliary group and that we must consult our advisory councils in all matters of policy and procedure.

Even if you feel that you do not need the Auxiliary, please believe that the Auxiliary needs you.

Be mindful, too, throughout this coming year, that one of the objectives of this group is at all times to stimulate the spirit of cooperation and fellowship through the common bond of friendship.

Kanawha County

The Woman's Auxiliary to the Kanawha Medical Society held their first meeting of the Fall season on September 10 at Charleston. Mrs. Ray Kessel, president, presided and twenty-four members were present. Mrs. Robert Price and Mrs. Randolph Anderson reported on the activities of the Auxiliary at the state meeting. Mrs. M. F. Petersen was the speaker of the afternoon. The usual business of the organizations was discussed and the next meeting was planned for October 8, at the Charleston Woman's Club.

MRS. CLAUDE SMITH, *Secretary.*

The National Bulletin

The early fall platform of the Auxiliary seems to have but one plank. It is—"Subscribe to the *Bulletin!* One dollar a year."

One of the major aims of the National Auxiliary is to extend the circulation of this attractive booklet which is now published quarterly. The goal which has been set is a subscription list of six thousand—one-fourth of the membership.

The profession of any husband needs the interest and support of its wives. The medical profession is no exception. Let's learn its needs and problems more fully by reading the *Bulletin.*

Executive Board Meeting

The executive board of the Auxiliary to the West Virginia State Medical Association will hold its annual fall meeting at the Woman's Club in

Charleston on Tuesday, October 8, 1940. The business session will begin promptly at ten o'clock.

At one o'clock in the Woman's Club there will be a luncheon, sponsored by the Kanawha County Auxiliary, to which all Auxiliary members are invited. The tickets are sixty cents. Make your reservation now with Mrs. Ray Kessell, 600 Randolph Street, Charleston.

COMMUNICATIONS

The Handbook—Blessing or Curse?

Sometimes I wonder what would happen to the Association if I were not around to offer suggestions out of my inexhaustible ignorance, but it was depressing to dwell on this gloomy, though inevitable state of affairs, so, with brief windup, I will sling my high swift one and see what you can do with it.

My proposal is that the handbook—so intelligently compiled by our Mr. Savage for distribution to the members of the House of Delegates for the purpose of their familiarizing themselves with the various reports and recommendations of the Association committees that intelligent (?) debate would result in constructive action on the part of the delegates—entirely miscarried for the very good reason that all the reports were approved in less than fifteen minutes without discussion, constructive or destructive.

Those of us present at the meetings of the House of Delegates will recall the incident of the placing of the monument to the founders of the Association in the wrong town with the wrong names inscribed thereon taking up some forty-five minutes discussion. I do not know the cost of the monument to the Association but from the amount of time given for this discussion it must have cost us from forty to sixty thousand dollars at least. We will call this our financial recreation and so pass on to a subject which will reflect on our intellectual form of recreation at this same meeting; namely, the presentation of a resolution calling for control of sale of the barbiturates. After an hour or so of discussion it was recalled that similar action had been taken some years ago by our House of Delegates.

In this matter of passing and repassing motions and resolutions, erecting and re-erecting monuments we all had a most enjoyable meeting but did we accomplish anything constructive for our Association? It would seem to me that we had earned a monument for do-nothingness.

The Association committees reporting in the handbook have asked many questions which needed the sincere deliberation, help and advice from the delegates. Any committee to function constructively must have help and cooperation, whether it be destructive or constructive, in order that good may result to our membership.

In the report of the Postgraduate Clinical Studies Committee there is an expenditure of $40,000 called for over a five year period.

The Child Welfare Committee asks the question in reference to permitting federal grants-in-aid to become a fixed part medical service are we not bartering away our freedom?

The Legislative Committee presents three major problems deserving our sincere deliberation.

The Medical Service Committee presents problems involving the very heart and soul of medical practice.

The House of Delegates, one-fourth of the membership not in attendance, was largely a 'play' session and at this hour the various committees do not know how to proceed.

Much food and thunder lies herein.

—ANDREW E. AMICK, M. D.

High Blood Pressure

Evidence that high blood pressure is the result of obstruction of the arteries of a kidney is presented in *The Journal of the American Medical Association* for September 14 by Nelson W. Barker, M.D., and Waltman Walters, M.D., Rochester, Minn., who cite five cases in which the blood pressure returned to normal after the affected kidney was removed.

The pressure has remained normal for some months in four of the patients; in the fifth case sufficient time has not elapsed since operation to make a definite statement, the authors say.

In support of their contention, Drs. Barker and Walters state: "In 26, or 45.6 per cent, of a series of 57 cases in which a diagnosis of chronic atrophic inflammation of a kidney was made by x-ray study there was an elevation of blood pressure. In 24 cases in which chronic atrophic inflammation of a kidney was diagnosed after its surgical removal 15, or 62.5 per cent, showed an elevated blood pressure and 11, or 45.8 per cent, definite hypertension."

Neighbor Journals

The Good Companions

Have you a case of "war jitters"? Has the fifth column of worry got you down? Does the shrinking margin of your personal security revive the symptoms of your stomach ulcer, gall-bladder disease, or unbalance your thyroid secretion? Do you wake suddenly in the night asking yourself: Whither are we drifting? Have you a condition bordering on anarchy in your anxiety states? Have you found something new in your neuroses?

Relax. Take a trip to the country. Leave your radio at home. Leave a note for the milkman, discontinue the daily newspaper and get out into the country, into the fields, especially into fields of tall grass, under the stars! From now into the early fall if you follow this advice, the friendly and harmless chigger will soon divert your mind. He does not transmit any disease according to the U. S. P. H. S., and does not burrow into the skin nor embed his body. He feeds on the upper layers of the skin after this tissue has been dissolved by a substance which he injects into it. This substance is a sovereign remedy for any neurosis which may be turning your life into a pretzel bender's holiday, for it causes the most intense itching. If you can still worry about anything else while submitting to a mild infestation with chiggers, your time would be better spent in the care-free company of some good alienist.

But assuming that you are organically sound and that, cured of your "war jitters," you wish to rid yourself of your therapeutically good companions, it may be found advantageous to apply a thick lather of soap, let it remain ten minutes or longer, wash, lather again, and rinse thoroughly with clear water. If this is ineffective, try kerosene or 95 per cent alcohol. If you have no kerosene or alcohol you may console yourself with the thought that "* * * after the chigger has become engorged with food, it loosens its hold and falls off."—*New York State Journal of Medicine.*

State Medicine

Should the tragedy of state medicine befall the people, it would be too bad if any of the blame could be justly placed on the medical profession. There is yet room for much improvement in the

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artful application of known medical facts. It is not only the duty of every doctor to possess a reasonable amount of medical knowledge, but it is his duty to apply it to the best advantage of his clientele. If a fifty cent bottle of cough syrup is just as good as a three dollar bottle, the fifty cent bottle should be prescribed for the man who can not pay for the three dollar bottle. Expensive x-rays should not be required for diagnosis when the simple clinical symptoms make certain the diagnosis, except of course, when the people demand it and have the money to pay for it. The Golden Rule should apply in the practice of medicine as in all other noble undertakings. The patient should be known in all of his relations to life in order to be treated scientifically and economically to the best advantage of all concerned. Medical problems should be kept in mind even in dealing with the individual. The men who are selected to practice medicine should have a professional mind, a medical soul, and a missionary heart. It is not enough to treat people by numbers in a totalitarian manner. Medicine needs religion as well as the nations of the earth. Democracy should still find a stronghold in the medical profession. Peace should always be carried in the right hand of the medical profession, as it strives to keep people fit to fight for democracy. The medical profession is informing its clientele on health problems, but the field of this opportunity has hardly been touched. The consumption of whiskey robs a nation of its freedom in time of war and its economical security in time of peace. It is responsible for one-half the motor vehicle accidents, killings and venereal diseases, but the medical profession has not yet the courage to take much stand on it. This is just one problem. A strong and vigorous people should be the pride of the medical profession. We should ever keep in mind human values and should appreciate our opportunities to enhance them.—*Mississippi Doctor.*

Educating the Public

Dr. W. D. Gatch, writing in *The Indiana State Medical Journal*, makes an indictment of much of present-day health education of the people on the basis that it frightens many more than it helps and,

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furthermore, has led the people to expect more than medical science is able to deliver. He urges us to consider that we have not and we cannot change the death rate from any of the diseases whose cause we do not understand. Dr. Gatch comments on the points that many are being led to believe that cancer is always curable early; that we can prevent insanity; that we can prevent the other degenerative diseases if we physicians but knew about them soon enough. All of which, he states, is not true.

For the most part we agree with Dr. Gatch, although we are not concerned with the fellow who has become a hypochondriac from reading medical and health columns. Something else could have dislocated his mind if the health column had not.

This is written for the purpose of pointing out that the health information which has been disseminated from our Bureau of Public Education has always pointed out that medicine does have certain limitations. It has consistently emphasized that all progress from now on until we learn the answer to a lot of questions, rests upon the shoulders of the public. It has endeavored to show people that they can resist diseases better if they will but eat properly, get adequate sleep and rest, work and play in a healthy manner. Finally we have warned them that they must be on the lookout for appendicitis, cancer and chronic infections themselves, pointing out that physicians can get more cures for these conditions if they will confer with physicians early but that some diseases are fatal from their beginning.

The question boils down to this: Health education has its place in modern civilization but its benefits depend pretty much on what kind of information is given out and how well it is tempered in the light of medical science.—*Ohio State Medical Journal.*

Inopportune

The American Medical Association goes on trial on the charge of violating the Sherman anti-trust law on October 21 in Washington, D. C.

At the same moment, the government which, through one arm has brought a criminal indict-

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ment against the officers and two component units of the association, will through another arm be asking and receiving essential aid to the defense of the United States.

The organization and discipline which is regarded as criminal by the justice department will be thankfully and eagerly put to use by the War Department in the selection of the men who will serve in the defense forces, in medical care for armed forces and in maintaining services for the civilian population.

If the usual procedure is followed, officers of the American Medical Association will be required to remain in Washington for the duration of the trial, a period that may run into weeks and months. At the same time, they will be forced to exert every effort at long range, to assemble and tabulate the enormous amount of information about the medical men of the country that was asked of them by the Surgeon General of the Army at the New York meeting.

The burden placed upon them at this critical time will seem the more indefensible to casual observers in view of the fantastic nature of the charges against which they are now called upon to defend themselves.—*Minnesota Medicine.*

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Hearts of the Well-To-Do

Rather important in preventive health work in America are the life insurance companies, which profit by extending the life span of the assured. In this work buyer and seller, that is, company and policyholder, usually cooperate in harmony. Their aims are identical.

Largely through insurance statistics has it been established that overweight is a menace to longevity, and that diabetes, for example, is more common in the overweight than in the underweight.

The Life Extension Examiners have recently published results of a study of the electrocardiograms of a group of 2,400 presumably normal men who were maintaining insurance policies of more than $25,000. The policyholders came from all parts of the country, and were both urban and rural. Their average age was 47.8 years.

They were classified according to the electrocardiograms in three groups: (1) normal, (2) with borderline changes, and (3) as showing definite impairment of the heart. Definite impairments were such changes as a "PR interval of more than 0.21 second; QRS interval more than 0.11 second; inverted or diphasic T^1; inverted or diphasic T^2; relatively deep Q^3; auricular fibrillation, or any combination of these." Only about one in three of the assured was classified as clearly normal. More than half came in the second or borderline group, and one in ten had definite impairment.

About nine out of ten of those with definite impairment as shown by the electrocardiogram had no symptomatic complaint. They had come for study only because their policy permitted a periodic health examination. About half of the last two groups were overweight. Group 1, with no suggestion of abnormality in the electrocardiogram, contained a large number of underweight persons.

Enlargement of the heart occurred in nine out of ten persons of Group 3. Systolic murmurs occurred twice as frequently in Group 3 as in Group 1. Systolic blood pressure of more than 150 occurred in around 20 per cent of Group 3, and about three per cent of Group 1. Diastolic pressure of more than 100 was detected in two per cent of Group 1 and in nearly 15 per cent of Group 3. Abnormal electrocardiograms were much more common among smokers than among non-smokers.

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This might be considered as a toxic effect of nicotine. However, it is possible that non-smokers as a group are more abstemious or temperate in their food and general habits.

Such studies as these are most informative and serve to emphasize the importance of the periodic health examination of well persons, and the value of including an electrocardiogram in the study when this can be done. Since a considerable number of the impaired showed no symptoms, one may say that clinically the conditions were probably not diagnosable.

The work is also of value in demonstrating what may be expected from the hearts of a group of men under 50 in easy circumstances and presumably normal at the time of taking out a large insurance policy.—*Southern Medical Journal.*

How About Your Ethics?

Framed and hung on your office walls and used as a shrine where each day you should go and read, ponder its import, and rededicate yourself to the altruism it declares, should be a copy of Dr. Robert Louis Stevenson's "Eulogy of the Doctor." Thinking many of you men who are forgetting the spiritual side of medicine in your intense interest in its strictly scientific, professional and economic aspects, let me quote this wonderful tribute from the decorated and framed copy now before me:

"There are men and classes of men that stand above the common herd; the soldier, the sailor, the shepherd not infrequently, the artist rarely, rarelier still the clergyman, the physician almost as a rule. He is the flower of our civilization and when that stage of man is done with, only to be marvelled at in history he will be thought to have shared but little in the defects of the period and to have most notably exhibited the virtues of the race. Generosity he has, such as is possible only to those who practice an art and never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Herculean cheerfulness and courage. So it is that he brings air and cheer into the sick room and often enough, though not so often as he desires, brings healing."—*Georgia Medical Journal.*

Tuberculosis of the intestinal tract is so frequent an occurrence in chronic pulmonary tuberculosis that it has sometimes been considered a part of the same disease.

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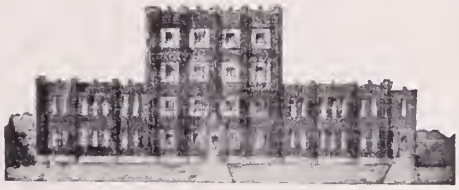

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Luteinizing Hormone Isolated

The isolation in pure form of the luteinizing (interstitial cell-stimulating) hormone of the anterior lobe of the pituitary gland of swine was announced in the August 23rd issue of *Science* by Drs. Shedlovsky and Rothen of the Rockefeller Institute for Medical Research, New York, and by Drs. Greep, Van Dyke and Chow of the Squibb Institute for Medical Research, New Brunswick, N. J. The achievement is specially noteworthy because the chemical nature of the endocrine principles of the anterior pituitary gland renders them difficult to isolate and analyze since they are proteins or complex polypeptides which are extraordinarily vulnerable to most types of ordinary chemical manipulation.

Proof of the purity of the luteinizing hormone was established by solubility studies in various buffer solutions, by obtaining electrophoretic patterns employing a Tiselius apparatus and by observations of the sedimentation rates in the ultracentrifuge. From the data thus obtained and from the determination of the diffusion constant, the molecular

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weight of the pure luteinizing hormone was estimated to be approximately 90,000. Its isoelectric point was found to be at pH 7.45.

Chemical analysis of one specimen of pure hormone showed it to have the following composition: carbon, 49.37 per cent; hydrogen, 6.83 per cent; nitrogen, 14.93 per cent; ash, 0.93 per cent.

Tests of the pure hormone in hypophysectomized twenty-one day old male rats showed that one microgram of hormone nitrogen (6.7 micrograms of hormone) caused a significant increase in the fresh weight of the anterior lobe of the prostate; double this quantity produced an increase in testicular weight. In hypophysectomized, immature female rats, the hormone maintained the interstitial cells. If, however, the pure luteinizing hormone was administered after follicle growth had been stimulated by follicle-stimulating hormone, it caused the formation of corpora lutea perhaps preceded by ovulation.

The significance of this announcement to workers in endocrinology is that it contributes to the elimination of much of the pre-existing confusion with regard to the possible number and effects of the gonadotropic hormones which have been postulated by earlier investigators. In an earlier paper the Squibb Institute workers announced the separation in nearly pure form of not only a luteinizing (interstitial cell-stimulating) hormone but also a follicle-stimulating (gametogenic) hormone from the anterior pituitary gland. It may be assumed that by using the newest tools for physical chemical investigation which were so helpful in the isolation in pure form of one of the anterior pituitary gonadotropic hormones that the other will likewise be obtained as a pure protein.

Thus far is has not been possible to isolate large enough quantities of these pure hormones for clinical studies. This is obviously the next step as soon as satisfactory yields can be obtained. At any rate it seems to have been clearly demonstrated that two gonadotropic hormones can be isolated from the anterior pituitary gland. They are separate chemical entities and act on different structures within the primary sex gland (ovary or testis).

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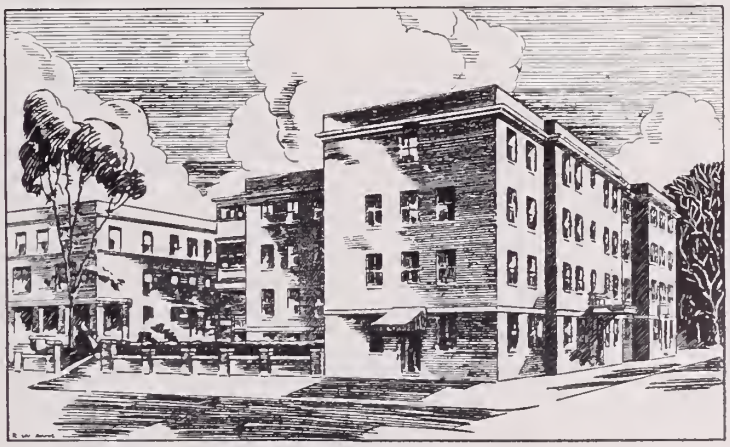

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Arch Hatfield Testifies

Although physicians are no more interested in the Hatfield-McCoy feud than any other profession or group, it is felt that the following article about one of the Hatfield descendants, clipped from the Septemebr 12 issue of a Beckley newspaper, has a distinct "medical" angle. It is reproduced, in part, for that purpose. The article reads:

Bloody Mingo county, they called it back in those days. Way back before the turn of the present century it was, that the first of a series of explosive events took place, culminating in the notorious vest pocket war, which has since been glorified nationally in story and song and which furnished the theme for many a fireside story in the cabins of mountain folk all over the county.

It began on election day in August, 1882. In a typical oldtime election day brawl Ellison Hatfield, grandfather of Arch, was fatally wounded by Tabby McCoy and his two brothers. He had been shot three times and stabbed thirty-two times.

Anson Hatfield, brother of Ellison, who was subsequently to become known by the ominous title of "Devil Anse", informed the three McCoy boys that, if his brother Ellison got well, all would be forgotten. On the other hand, he stated simply to them should Ellison die, he would on the day of his brother's death, kill all three before the sun had set.

Despite his numerous wounds, Ellison lived from Friday until Monday. Before the sun had set on that portentous day, Anse Hatfield had carried out his quietly declared ultimatum, and all three McCoy boys had crossed the Great Divide.

The healing warmth of time has long since thawed all rancor from the hearts of descendant members of the two factions and today they live peaceably almost side by side, normal American citizens, content with their lot and doing their bits in developing this part of the country wherein their ancestral roots are so deeply imbedded. And now, back to the present, and to Mr. Arch Hatfield's story of World's Tonic relief: "It seems as if everybody in this town is talking about World's Tonic. I began on it because I was in such bad shape from ailments resulting from constipation including disordered kidneys * * *."

As a matter of additional interest, the column adjoining the foregoing story carried an advertisement of the Foster Funeral Home offering 20 gauge Armco iron metal caskets complete with embalming and funeral service at $175.

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TUBERCULOSIS ABSTRACTS

(Continued from page 475)

Applying our formula to the United States to find the number of active cases of tuberculosis, we multiply the 60,000 deaths by 10 and the result is 600,000 which is approximately correct. The 25 per cent that will accept and need hospitalization would require 150,000 beds. There are now but 90,000, which means that 60,000 more beds are needed to provide a full complement.

Many additional beds for tuberculosis patients placed where most needed should be the No. 1 item on our agenda. Health education as it applies to tuberculosis is item No. 2. So familiar to us are these matters of what ought to be common knowledge that we deceive ourselves and erroneously believe that our teaching has accomplished its purpose and that the people as a whole are well informed. We must not jeopardize our favorable position through overconfidence. With the weapons now at our command wielded by the agencies now in the field working in close harmony we may expect continued progress toward our goal.

The ultimate surrender of the tubercle bacillus, however, is two generations away unless new developments in treatment come to our aid. This may be brought about more quickly by discoveries made in the fields of chemotherapy and nutrition. Research in both of these fields is yielding rich returns.

While the chemists of various types and interests are delving in their laboratories, we plodders in the broad fields of physics and education must continue to use the methods that have proven sound and true. Yet we must be alert and responsive as new procedures are developed, change our tactics if necessary, and vary our course to keep pace with the changing times.

With all the research work being carried on, sooner or later a discovery should be made that will revolutionize the treatment of tuberculosis. I have faith that this will come to pass.

Presidential Address by Henry D. Chadwick, M.D., Thirty-sixth Annual Meeting of the National Tuberculosis Association, Cleveland, Ohio, June 3-6, 1940.

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Advertising space in the directory of physicians in limited practice can be had by communicating with Mr. Joe W. Savage, Secretary-Manager of the West Virginia Medical Journal, Box 787, Charleston, W. Va. The cost is one dollar per month. Space may be had only by members of the West Virginia State Medical Association.

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THE TREATMENT OF SINUSITIS*

By WESLEY C. BOWERS, M. D.
New York City, New York

THREE hundred million colds a year! This is the estimated number for the United States. When it is realized that every cold is a potential sinus involvement and that chronic sinusitis probably causes more ill health than any other disease, it is obvious that every physician should be thoroughly familiar with the pathological changes which accompany sinusitis. The general physician is the first to be consulted; he should therefore, be in a position to give authoritative advice. Yet, in the past, the possibility of allergic influence has not always been sufficiently considered and comparatively little has been known about the physiology of the nose, the pathology of sinus infection, and the effect of constitutional conditions upon the function of the nose and sinuses.

ANATOMY AND PHYSIOLOGY

The nose is an extremely complicated anatomical structure. No two nasal chambers are exactly alike; no two can be expected to act alike, even in the same individual. Nor do any two patients respond identically, either constitutionally or locally, to nasal therapy. The function of the nose is so controlled through the nervous system that any abnormality in any portion of the body, from the skin to the heart, may have a decided bearing on it.

Small wonder, then, that there is considerable confusion on the subject in the mind of the layman, the general practitioner and even the rhinologist. I believe Ballance[1] has well stated the case when he says, "Once the pathology is understood, differences of opinion as to therapy should disappear."[2] To further this better understanding, let us review brief-

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ly some of the highlights in the anatomy and physiology of the nose.

The nose consists of two chambers, separated by the septum and surrounded by cavities connected with it by very small openings, called ostia. There are three turbinate bodies situated one above the other in the lateral wall of each chamber, dividing this wall into three compartments called respectively the superior, middle and inferior meati.

The lacrimal duct empties into the inferior meatus (below the inferior turbinate) hence the futility of treating nasal conditions with drops put into the eye. Into the middle meatus (below the middle turbinate) empty most of the other sinuses; i. e., the antra, frontals and anterior ethmoids; therefore the anatomy of the middle meatus is the most important insofar as sinus involvement is concerned. Drainage from all sinuses depends principally on ciliary action, helped in most instances by gravity. The frontal sinus drains downhill, from its lowest point by a long, often tortuous passage, through ethmoids into the middle meatus. The anterior ethmoids drain downhill, into the middle meatus at nearly the same point as the frontal and antrum. The antra empty into the middle meatus through one or more openings situated in the uppermost part of the antral cavity, necessitating uphill drainage. Here any interference with the action of the cilia renders drainage impossible.

DRAINAGE OF SPHENOID

The posterior ethmoids empty into the superior meatus (below the superior turbinate), while the sphenoid empties into the space above and posterior to the superior turbinate. The sphenoid is drained by an opening situated high on its anterior surface, necessitating uphill drainage; here, too, the action of the cilia is of prime importance.

It is thus evident that all the sinuses drain downhill excepting the antrum and sphenoid. The antrum is the most common site of infection, the sphenoid the rarest. The probable explanation is that the anatomical structures surrounding the ostia of the antra are far more liable to be deformed, thus obstructing the ostia and impeding ciliary action. For this reason the antrum is the sinus most likely to require aid to drainage.

A large part of the drainage from the sphenoids and posterior ethmoids goes down the throat. Most of the other sinuses, by reason of ciliary action, would naturally drain down the throat also, but the action of blowing the nose directs a certain amount anteriorly. The postnasal and the lymphatic drainage from an infected sinus causes the tracheal cough so characteristic of sinus infection.

INVOLVEMENT

If the formation of the nose were perfect, sinus infection would occur only as a result of swimming, ill-advised local applications, or allergy. Since such perfection is rarely attained, we shall find that about 85 per cent of all x-rays of the nasal sinuses show some degree of involvement. A septal ridge or spur which projects into the middle meatus, especially in the anterior part, crowding the middle turbinate against the outer wall and so interfering with the function of the ostia of the antrum and other sinuses, is almost certain to result in poor drainage from these sinuses, with consequent chronic infection. When there is obstruction of one side of the nose by a deviated septum, there will be a compensating enlargement of the turbinate on the opposite side as a result of improper aeration. A middle turbinate which has become greatly enlarged as a result of poor aeration, or of allergic reaction, will most certainly obstruct the ostia by its size alone, and sooner or later infection will occur. In such a case, it is necessary either to relieve the underlying allergy, improve air circulation or create better drainage for the sinuses involved.

When the nasal ostia are unobstructed, inspiration causes a negative pressure in the nose and sinuses; expiration, a positive pressure. It has been demonstrated that when because of obstruction of the ostia, pressure

in the nose and antra differs, secretion will generally be found in the antra. Insufficient ventilation of the nose, with the resultant mouth-breathing, also causes poor drainage from the sinuses. Experimentally, it has been shown that dyes placed in an acutely inflamed sinus, of which the ostia are completely blocked, will appear in the urine within fifteen minutes. This will give some idea of the absorbing power of the mucous membrane in inflamed sinuses when the ostia are blocked by acute swelling or chronic thickening. It also explains why the sinus patient seems more ill than one with an ordinary cold.

"COLD" SELF-LIMITED

If the function of the nose is unimpaired, a "cold" is self-limited and will disappear in a few days. If due to an allergic condition, it will clear up in one or two days unless there is a superimposed infection or too much medication to which the patient is sensitive. A cold which persists longer than a week, with continued congestion of one or both nostrils, excessive secretion, cough or recurring temperature, is strongly suggestive of sinus involvement. At the beginning of a cold, there is an acute congestion of all nasal membranes, the ostia swell and drainage becomes difficult. At this point anything that can be done to improve the general resistance and open the nasal ostia will facilitate prompt recovery. When, in spite of all efforts, the ostia do not open, suppuration follows. If this stage is prolonged, there is infiltration of the connective tissue and permanent hyperplasia of the lining membrane. Unless relief is now given, degeneration of the mucosa, together with polypoid and cystic formation occurs. This condition can be cured only by removal of the diseased tissue; if this is not done, the patient must tolerate the symptoms of chronic sinusitis.

The cilia constitute the greatest protection which the nose possesses. The entire lining membrane of nose and sinuses is supplied with these hair-like processes which wave toward the ostia and the nasopharynx. Over the cilia is a tenacious layer of mucus which tends to catch foreign particles and invading bacteria and is moved onward by the cilia. The introduction of anything into the nose which interferes with the ciliary action or the mucous coat, impairs the natural protection supplied by the mucous membrane. For this reason the habit of spraying the nose with antiseptics is obviously not to be recommended. Unobstructed ostia and free ciliary action are all-important and must be maintained or re-established at all times. In acute infections swelling of the membrane in the ostia halts normal drainage; hence anything which tends to shrink this membrane is an advantage. Our choice of drugs—of which we shall speak later—must be confined to those which do not interfere with ciliary action. Thick pus retards or stops the action of the cilia, and should be evacuated by means of lavage. Since ciliary action ceases at temperatures below 53 degrees F. and above 109 degrees F., the use of too hot or too cold solutions or vapors is contraindicated.

BLOOD SUPPLY ABUNDANT IN TURBINATES

The turbinates have the most abundant blood supply of any part of the nose; they have much elastic and smooth muscle fibre and large cavernous sinuses, giving them the characteristics of erectile tissue and rendering them particularly responsive to all types of sympathetic nervous system reactions, to inflammation or allergies, to thermal, chemical (either local or general), emotional and constitutional changes. Their function is to warm and moisten the inspired air. Because this function is maintained by the coordinated action of both sensory and involuntary nerves, any constitutional dyscrasia may cause functional nasal changes and local symptoms which may simulate sinus disease. Heetdirks[2] has shown that "under certain conditions, in normal individuals, the excitation of the function of regulating temperature and moisture and of filtering the inspired air, may produce symptoms of which the patient may complain. Such symptoms as nasal obstruction in hot

dry rooms; a watery discharge in cold weather; and, during adolescence, the dropping back into the throat of secretions and the obstruction of the nose on the dependent side are physiological responses which need not necessarily be the result of pathology in the nose." It is well to look for causes other than nasal, when the patient complains of a postnasal discharge which is not excessive, especially where there is no pronounced tracheal cough. Fifty per cent of such cases are probably allergic. Other possible causes are endocrine imbalance, intestinal stases, anemia, syphilis and diabetes. When the postnasal discharge is abundant and accompanied by the characteristic tracheal cough, the cause is usually sinus infection.

ANTRA

My personal experience has led me to believe that the antrum is the keystone to most nasal pathology and the best point of attack. This assertion will not go unchallenged, as many believe the ethmoids to be the chief offenders. In support of my thesis, I present the following statistics obtained from a cross section of one thousand case histories taken from my private practice. These histories cover a twenty-five year period, limited to ear, nose and throat work, and number approximately twenty thousand records. Of the thousand cases studied, 474 or 47 per cent, gave no history of nasal disturbance, the remaining 526, or 53 per cent, showed nasal involvement in the following proportions:

One hundred and ninety-one, or 36 per cent, were due to causes other than sinus infection; 335, or 64 per cent, showed sinus infection.

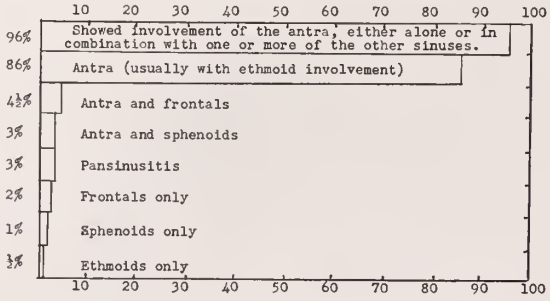


TABLE "B"
Chart Showing The Incidence of the Involvement of the Various Sinuses.

From these statistics the importance of the antra as retainers of nasal infection appears self-evident. Granting this, it is also evident that if acute antral infection is prevented from becoming chronic there will be far less involvement of the other sinuses through extension of infection. To my mind, chronic involvement of the ethmoids alone is due to

Fig. I: This shows a case of chronic pansinusitis.

allergy. The above figures show how rarely the ethmoids are involved without accompanying involvement of the antra and vice versa. In such combined infections, acute or chronic, treatment of the antra will do much to clear up the ethmoids but treatment of the ethmoids will never cure the antra.

Because of the anatomy of the nasal chambers, treatment of the antra will almost always tend to clear up any other sinuses simultaneously involved. In the acute stage, shrinkage of the middle meatus is advisable; this can be done by means of a pledget of cotton moistened with a mild cocaine solution, and the use of ephedrine, one per cent, in normal saline in the form of drops. As the acute stage passes and the secretions become thicker it is advisable to aid drainage by lavage of any obstructed sinus. Such treatment can best be accomplished, with the minimum of trauma, by passing a canula

through the normal or accessory opening. The question of the number and frequency of irrigations is an important one and requires considerable judgment and experience. The character of the secretion obtained, plus the reaction, general and local, to such irrigation, are the determining factors. For some patients daily irrigations are preferable; for others every two or three days is sufficient, while still others require a longer interval.

Fig. II: Same patient as Fig. I; 15 months after double radical operation on the antra showing the beneficial effects on the other sinuses.

In the chronic stage of pansinusitis, operations on the antra will do more to clear up the other sinuses than any other procedure.

ALLERGY

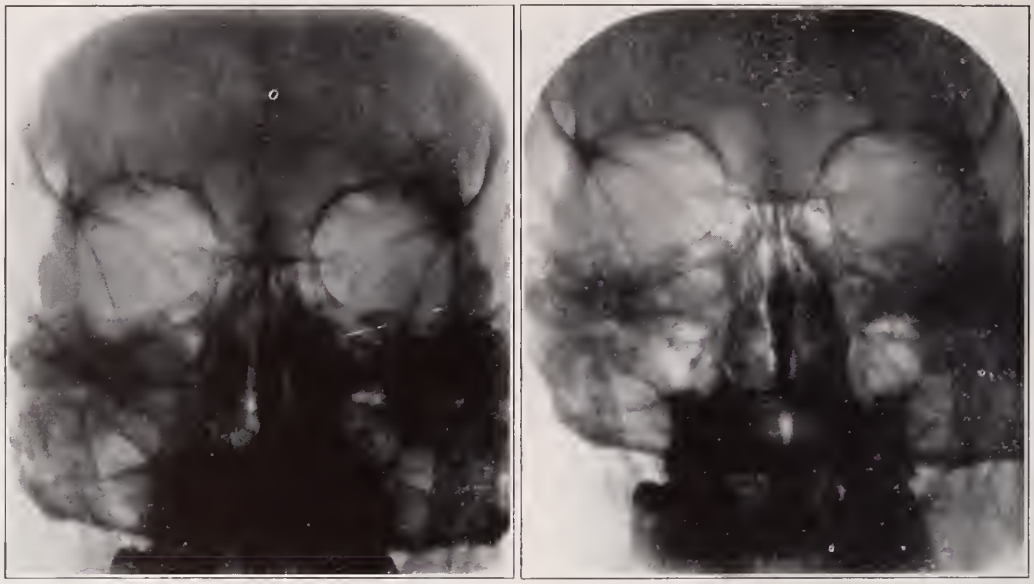
In any nasal syndrome allergy must first be considered as a possible cause. Hansel[3] gives statistics indicating that in about one-third of the cases seen by the rhinologist, the symptoms are primarily allergic. Such cases can usually be determined by a careful preliminary history, but negative skin tests cannot always be accepted as ruling out any sensitivity. When allergy is the underlying but undiscovered cause, the results of any and all nasal procedure is likely to be unsatisfactory. Allergy can simulate every nasal symptom of which a patient may complain. He may have what he calls a "cold", although a careful history will reveal that these "colds" come suddenly, with sneezing and

Fig. III: Shows acute pansinusitis which was cured in three weeks by lavage through the normal openings; ʒiv of thick pus was found in each antrum.

are of but one or two days' duration, or he may have a "chronic cold" which strongly suggests sinusitis but may actually be allergic.

Fig. IV: Same patient as Fig. III; two months later showing how the antra cleared.

Any medication in a nose of this type is likely to increase the symptoms. Operations are contraindicated unless the allergy is also

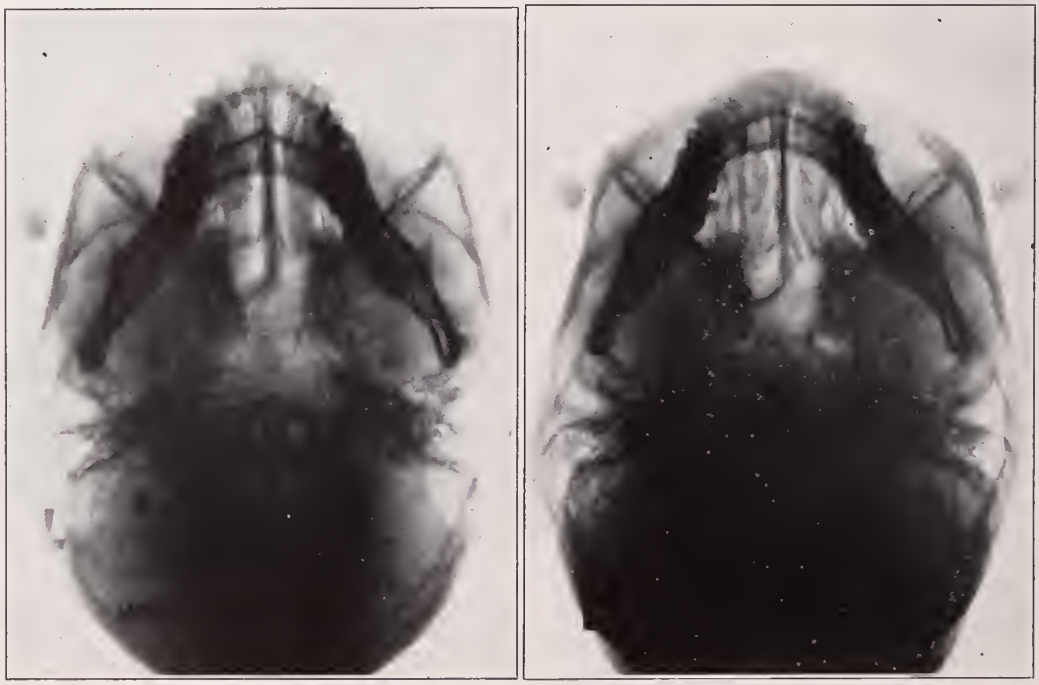


Figs. V and VI: Same patient; showing how the ethmoids and frontals cleared after treating the antra.

treated; many nasal operations would prove unnecessary if the underlying allergy were treated first. On the other hand, the perennial types of allergy may bring about permanent changes in nasal membranes rendering them more susceptible to infection; here operation for the cure of infection should be undertaken. In cases where treatment of the allergy, per se, fails to give adequate relief, the removal of hypertrophied tissue will help, by improving drainage and ventilation.

MEDICATION

A wide variety of drugs has been tried in nasal treatment and experience has taught some very important lessons in this field. Let us consider some of the drugs commonly used in the light of present day knowledge of their action.



Figs. VII and VIII: Same patient; showing how the sphenoids cleared after treatment of the antra.

Ephedrine (one per cent) in normal saline interferes as little as any known substance with the natural function of the mucous membrane. It is excellent to relieve congestion and to assist sinus drainage. It should be used, without preservatives of any kind, in the form of drops (one-half inch of the solution in an eye dropper) placed in each nostril with the head well back. It should not be used too frequently, as some patients develop an intolerance for this drug. Increased congestion following its use indicates either the existence of such an intolerance or of a sinus which needs attention.

USE OF COCAINE

Benzedrine inhalant will give considerable temporary relief but used too frequently will produce bad constitutional reactions. It has, however, no effect on the cilia.

Cocaine in a weak solution (not over five per cent) has no deleterious effect upon the cilia. In the majority of cases its use by direct application, alone or in combination with ephedrine, is most effective in shrinking the ostia. However, inquiry should always be made regarding the patient's reaction following its use, since cocaine may cause severe headache and depression and some people have a decided idiosyncrasy for it. Whenever a patient reports headache or malaise following treatment, the cocaine is sure to be the cause. In all such cases, a substitute, such as pantocaine (two per cent) and ephedrine (one per cent) should be used.

Normal salt solution does not interfere with ciliary action but the habit of daily irrigation with this solution will in time produce definite changes in the mucous membrane. It is also well to note that after nasal operation dry treatment is preferable to wet, as moisture causes edema of the new tissue.

Argyrol and neosilvol used frequently or over an extended period, will produce argyria. Patients often exhibit the characteristic silvery, dusky skin, black turbinates and nasopharynx, black streaks down the pharynx (I have even seen the interior of the larynx black) following the prolonged use of "argyrol." The appearance of argyria may possibly be delayed until months after the drug is discontinued but once it appears it is permanent. Since argyrol has no bactericidal properties when used in a pack, any beneficial result obtained is due to osmosis. In other words, the patient's nose is washed in its own secretions and shrinkage is obtained by drawing fluids out of the tissue. Hypertonic saline solution would accomplish the same result without danger of argyria.

Petrolatum does not interfere with ciliary action but it lies on the mucous coat and by its additional weight slows the progress of this coat toward the nasopharynx. This is true of any oily solution. It has been shown that drugs dissolved in oil do not penetrate the mucous coat to reach the epithelium; phenol and iodine are so firmly held in oil that they are rendered inert. Mineral oils when used in the nose have been known to produce lipoid pneumonia, especially in children; vegetable oils are less harmful. As a matter of fact, oil should be used only in chronic crusting conditions where the cilia are not functioning.

The constant use of any of the popular sprays for the nose, including menthol, eucalyptol, camphor, petrolatum, will produce definite changes throughout all layers of the mucosa and is not to be recommended.

CHEMOTHERAPY

Recently chemotherapy has entered the field of nasal therapy but so far there is very little to be found in the literature on the subject of its use in sinus infection. My own experience has been as follows:

Case A: This patient had a severe attack of sinusitis of one week's duration; temperature, 104 degrees; stiff neck; high blood count. Following the administration of sulfanilamide, all symptoms disappeared in three days' time.

Case B: Mrs. L. S., had had infection in the nose for three weeks. X-rays taken May 10th, showed the left antrum very dense, the left frontal cloudy, the left sphenoid questionable; there was

also thickened membrane in the right antrum. On this date, I washed five or six drams of thick green pus, partly broken down, from the left antrum. Pus was also seen coming from the left frontal and over the middle turbinate. Culture from the initial washing showed pure streptococcus hemolyticus. Antral irrigation on the 13th, three days later, showed no improvement. She was now given sulfathiazole, grams one, every four hours. Within twenty-four hours, there was no pus to be seen in any part of the nose. Two days later there were two drams of coagulated pus in the antral irrigation. The drug was stopped five days later. On May 23rd, ten days after the institution of the drug, the patient was symptom-free; there was no discharge in any part of the nose and the left antrum transilluminated very clearly. X-rays taken May 28th, fifteen days after the drug had been started, showed no cloudiness and only a small amount of thickening in the walls of both antra.

Case C: Mrs. L. This was a case of marked pansinusitis; the acute attack was of four days' duration. On May 27th, there was pus everywhere in the nose, especially over both middle turbinates and in the middle meati. Three drams of pus were irrigated from each antrum. Culture showed streptococcus viridans, staphylococcus hemolyticus and staphylococcus aureus. This patient was put on sulfathiazole on June 1st; two days later, there was practically no nasal discharge.

Case D: Mrs. P. was first seen May 28th, at which time she gave a history of a "cold" for the past six weeks. X-rays showed the right antrum and ethmoids very cloudy. Irrigation of the right antrum produced three drams of thick green pus; there was considerable pus in the middle meatus following antral lavage. On June 2nd, the patient was put on sulfathiazole grams one, every four hours, days and nights; on June 5th, three days later, there was no pus in the nose and the patient felt fully recovered.

Case E: Mrs. L. T., when first seen, March 8th, had had a "cold" for two weeks. There was pain over the frontals and soreness over both antra. Several drams of thick pus were irrigated from both antra; pus also issued from both frontals and the sphenoid area. X-rays showed a pansinusitis. In this case the right antrum was irrigated a total of ten times, clearing up in twelve days; the left antrum required eleven irrigations over a period of twenty-one days before it was clear. X-rays taken May 7th, showed all the sinuses clear. In this instance both antra cleared up entirely by the aid of antral lavage, and without sulfathiazole. However, the period between the first examination and the final cure was longer than in those cases where the drug was used in combination with irrigation.

DR. SHAMBAUGH'S REPORTS

I have used chemotherapy on very severe infections which seemed to be getting out of control and the result, as evidenced by the foregoing examples, has been almost miraculous. I, personally, have not seen any flare-ups in the treatment of sinusitis following the discontinuation of the drug, such as frequently occur in mastoiditis. However, at the recent American Medical Association meeting in New York City, Dr. Shambaugh reported two cases in which chemotherapy was used, which apparently recovered yet later developed meningitis and died. To my mind, this report constitutes a warning rather than a contraindication to the use of the drug. I have also tried chemotherapy on cases of a chronic nature, with thick pus in the antral washings and thickened membrane in the sinuses; in these cases I have had very negative results. Apparently the drug works best, in sinusitis, when in the presence of a fulminating infection. According to Dr. Shambaugh's report, it may have a masking effect, just as in mastoiditis, and will therefore need careful watching even after the patient is clinically well. The best method of checking on this masking effect is by means of x-rays. I have seen patients, clinically recovered from mastoiditis, whose x-rays showed progress in bone destruction. It is safer, in the presence of an undrained focus of infection, not to rely too much on chemotherapy alone.

A general rule to follow in the administration of the drug is that when there is no response to chemotherapy in 72 hours, if properly given, some additional help must be obtained. One of the apparent causes for failure of chemotherapy in such cases, is lack of de-

velopment of antibodies on the part of the host. However, when indicated, antibody determination can be made. The administration of the drug may be stopped or delayed for a few days, to allow time for the formation of antibodies but this will not be found as satisfactory as the use of sera, vaccines and immunotransfusions. Any one of these or a combination may be sufficient to insure the successful increase of antibodies and therefore a better response to the drug. (On this point, I wish to call your attention to an article by Champ Lyons which will be published shortly.)

SULFANILAMIDE

Of the various forms of the drug in present use, sulfanilamide appears to be specific for the streptococcus hemolyticus. Sulfapyridine has a broader usefulness; it is efficacious in pneumococcic and in staphylococcic infections as well as in streptococcic. It may produce toxic symptoms which are often severe, sometimes simulating meningitis so closely as to be alarming when it is used in the therapy of nose and ear infections. It should, despite this, be used in true meningitis. Sulfathiazole, although it frequently causes rashes, seems to be less generally toxic; it has an excellent effect on the pneumococci, streptococci and staphylococci, but it is not absorbed into the spinal fluid, hence should not be used in meningitis.

The introduction of the sulfanilamide directly into the sinuses is still in the experimental stage.

Another remedy which gives promise of great helpfulness is heparin. Heparin has already proved useful in cases of thrombophlebitis or thrombosis. It should be given in meningitis, preferably after operation, when the response to chemotherapy is not satisfactory. When given prior to operation, bleeding from the wound may be severe.

X-ray treatment of sinusitis is still debatable; some men claim excellent results in the acute stage of infections.

Diathermy is reported to cure when used twice a week for a month, but I have seen it increase the pain in acute frontal sinusitis.

Many other treatments have been advocated for use daily, or twice weekly, with the claim that cases so treated recover in a month's time. One cannot help echoing Hoople's[4] question whether "these treatments do not prolong the condition to make it last so long."

In this paper I have tried to give to the general practitioner some of the basic anatomy and physiology of the nose and nasal sinuses, together with a brief resumé of present day therapy, in the hope that a better knowledge on these points may lessen the confusion and misunderstanding on the part of both laymen and physicians in regard to the treatment of the nasal sinuses.

DISCUSSION

Dr. F. H. McGovern, Danville, Va.: Conservatism in otolaryngology is due first to the lack of success in many cases undergoing indiscriminate sinus surgery, secondly to increased interest in consideration of the fundamental precepts of nasal physiology, and thirdly to the attention paid nasal allergy.

I do not mean to condemn radical sinus surgery. In properly selected cases, it is conservative to perform complete operations; a well performed operative procedure may be the quick and safe way to recovery.

In spite of tremendous advances, the problems of nasal allergy remain unsolved; few cases indeed are cured by allergic methods alone.

I can only add to Dr. Bowers' discussion of sinus therapy the success we have found in the postural installations of isotonic aqueous solutions using the displacement principle of Proetz and the lateral "head low" position of Parkinson. Despite contrary opinion, the Dowling argyrol pack continues to bring considerable comfort and relief in certain phases of purulent nasal and sinus infections. Infrared radiations, especially in acute frontal sinusitis, and foreign protein injections have a place in the therapeutic armamentarium.

The otolaryngologist can certainly relearn from the general practitioner constitutional treatment of the acute sinus infection—rest, elimination, heat, and diet, and reserve the specialized methods to the unresolved infections. In chronic infections the oto-

laryngologist should also think in terms of general body function, with particular reference to dietary and endocrine abnormalities; the help of the internist in this respect is exceedingly valuable.

I can agree wholeheartedly in the statement that the antrum is the keystone of sinus therapy, but disagree in the statement that chronic ethmoid infection is largely allergic.

The indiscriminate use of argyrol drops and nasal irrigations is both unsafe and unphysiological. It is to be remembered that a cold that does not get well in a reasonable length of time is a sinus infection, and chronic sinus infection is the result of inadequate and improper care of the acute infection. The patient with frequent colds of short duration is very often allergic.

Dr. Wm. F. Beckner, Huntington: I am appreciative of the privilege of discussing Dr. Bowers' paper. I have nothing to add but would like to stress a few points.

In diagnosis the first and most important step is a thorough, carefully taken history and in this connection I would like to mention that many cases consult us complaining of sinus disease, whose real disability is maladjustment to the cares and responsibilities of life. As Dr. Alvarez emphasized, we must treat individuals as well as diseases. After the diagnosis of sinus disease is established, the patient should be warned about the probability of infecting the rest of the household. This is especially important in the case of the woman with several children. In the past I have seen many cases treated in which proper attention had not been given to the actual pathology present, the body's defense mechanism, and the patient's emotional constitution. It is also important if we are to get the best results from modern chemotherapy, that we make cultures from the nose. Many cases of so-called sinus disease are really manifestations of allergy.

Since nasal sinus infection is nearly always secondary to an acute cold, the proper place to begin the attack is against the cold. Instruct your patient that a cold is a potential sinus infection, and make him realize that an individual with a cold is sick and should be in bed. If patients would follow this advice the incidence of nasal sinus infection could be materially reduced. The red hot nose should be treated with respect and handled gently. To facilitate ventilation and drainage I like to use one-half of one per cent ephedrine occasionally combined with one-fourth or one-half per cent of cocaine and normal saline, gently instilled into the nostril, at slightly above body temperature.

Instruct the patient how to blow the nose. Have him take his handkerchief and hold it not up against the nostril—you show him how. How many people grab the end of the nostril and blow and force infection over into the sinuses. Have the nostrils free. If they must touch the nose, touch one nostril at a time and blow gently. Instruct them never to blow the nose if they find the nostril is blocked. A great many cases of nasal sinus disease occur because of this method of grabbing the end of the nose and blowing it and forcing the infection back into the sinuses.

Keep the room warm and at an even temperature, and the air moist. Do not purge the patient, but see that elimination is adequate. Give sedatives as needed.

X-ray is in the experimental stage in the treatment of sinuses and should not be used by the amateur, but only by a trained röentgenologist working with the rhinologist, and then only when the pathology has been carefully studied.

Dr. Wesley C. Bowers, closing the discussion: Somebody has asked me to mention the use of argyrol packs. I am afraid I cannot say very much in favor of argyrol. I see so much argyria that I want to emphasize the danger of it. Personally I prefer to shrink the nose with a mild solution of cocaine in the middle meatus.

I have enjoyed appearing before you and wish to thank Dr. McGovern and Dr. Beckner for their discussions.

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APPENDICITIS: AN ANALYSIS OF 1,588 CASES TREATED SURGICALLY*

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THAT appendicitis is still a subject of lively interest to the medical profession is evidenced by the number of important papers dealing with the disease each year. The continued interest is amply justified by the fact that an estimated 20,000 persons died of the disease and its complications in the United States in 1939. The profession is rightly disturbed by the further fact that the mortality from appendicitis in this country is not decreasing. On the contrary, it is stated to have increased steadily during the last thirty years.[1] The gravity of this mortality is augmented by the fact that the disease strikes down the young and healthy. The average at death is about twenty-seven years, the age when physical vigor is at its height and when the brain worker stands on the threshold of his most productive years. To quote Heyd,[2] "appendicitis is today one of the largest lethal conditions in our active, well-bodied and healthy individuals."

The diagnosis of appendicitis is now well understood and its surgical treatment presents no special difficulty. While we can properly find fault with the laity for a persistent belief in cathartics as "first thought in bellyache", it has to be admitted that poor medical and surgical judgment is also chargeable for a large share of the deaths.

With the above facts in mind, we have reviewed the histories, findings and results in 1,588 patients whose abdomens were opened for appendicitis alone in the Stevens Clinic between April 1, 1930, and December 31, 1939, a period of nine years and nine months. During the past few years all specimens have been sent to the pathologist for his study and report, but these cases are classified on the gross pathology as seen and interpreted by the operating surgeon. Ninety-eight per cent of the operations were performed by Dr. R. H. Edwards, Dr. Altamont Bracey and Dr. H. G. Camper. Ninety-seven per cent of the abdomens were opened through a McBurney incision.

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The material will be first considered in two series and the series then combined for further study.

In 1936 one of us (H. A. Bracey) reported 698 cases of appendicitis operated on between April 1, 1930, and December 31, 1936, inclusive. These cases are comprised in Table I. In this series of 698 cases, general anesthesia (ether-nitrous oxide-oxygen) was used in 675 cases, spinal anesthesia in 22 cases, and local in one case.

In the subacute and chronic group there are 349 cases with four deaths—a mortality of 1.15 per cent. One death was caused by pulmonary embolism and another by multiple abscesses of the liver. The third death was from nephritis and urinary suppression. The fourth death in the group was from massive pulmonary collapse.

In the acute group are 198 cases with two deaths, or a mortality of 1.01 per cent. One of these deaths was from staphylococcus infection of the abdominal wall. The patient was a colored male, 24 years of age, in whom the appendix had been removed and the wound closed without drainage. Death took

*Presented at a Staff Conference of the Bluefield Sanitarium, July 17, 1940.

place on the twelfth postoperative day. Pulmonary embolism was the cause of the second death in the acute group. This death occurred on the third day after operation. Ether was the anesthetic used in both cases.

In the gangrenous group are 72 cases with two deaths, giving a mortality of 2.77 per cent. A colored female, aged 62 years, died twenty-four hours after operation with the clinical picture of cerebral hemorrhage. A white male, 45 years of age, whose appendix had been removed through a McBurney incision and abdomen closed without drainage, died on the ninth postoperative day of what was thought to be paralytic ileus (probably peritonitis).

Of the 45 patients who came to operation with ruptured appendix and localized or generalized peritonitis seven died, a mortality of 15.55 per cent. The cause of death was generalized peritonitis in all of these cases.

Of the 25 patients with appendiceal abscess, two or 8.00 per cent died. These patients had been treated by drainage of the abscess and supportive measures. One died from generalized peritonitis; the other, suddenly on the fourteenth postoperative day, from what was clinically cardiac failure.

In nine cases the appendix was found to be normal, no fatalities resulting from operation in these cases.

In the total of 698 cases there were 17 deaths, or a mortality for the series of 2.43 per cent.

To this series of 698 cases we are able to add another series of 890 cases, which were operated on between January 1, 1937, and December 31, 1939, inclusive. In this second series general anesthesia was used 383 times; 287 of the patients given a general anesthetic were under 20 years of age. Spinal anesthesia was used 505 times; spinal and general in combination once, and local anesthesia once. Data on this series are set out in Table II.

The second series includes 428 cases of subacute or chronic appendicitis with one death —mortality of 0.23 per cent. This death resulted from gas bacillus infection of the abdominal wall.

In the acute group, with 328 cases, there was one death, or a mortality of 0.3 per cent.

TABLE I

April 1, 1930 Through December 31, 1936

Number of Cases	Character of Cases	Average Stay in Hospital (Days)	Number of Cases Drained	Deaths	Mortality per 100
9	Normal	11	0	0	0
349	Subacute & Chronic	12	0	4	1.14
198	Acute	12.5	0	2	1.01
72	Gangrenous	13.4	9	2	2.77
45	Ruptured Appendix with Peritonitis Localized or Generalized	14	35	7	15.55
25	Appendiceal Abscess	15.7	23	2	8.00
698	Total		67	17	2.43

The patient who succumbed was a colored male, 11 years of age. Twenty-four hours after appendectomy the child was seized with convulsions and died. As no autopsy was obtained, the cause of death was not determined. The operating surgeon described the appendix as acutely inflamed. The pathologist's report stated: "The entire appendix is discolored and edematous. The lumen is filled with purohemorrhagic fluid. Appendicitis, acute."

In 86 cases the appendix was gangrenous, one patient died, giving a mortality of 1.16 per cent. Death occurred on the fifth postoperative day and the cause was reported as paralytic ileus. Ten of the cases of this group were drained.

In the group with ruptured appendix with localized or generalized peritonitis there are 26 cases with four deaths, or a mortality of 15.30 per cent. The first death occurred in a colored female, age 15 years. When the abdomen was opened the distal two-thirds of the appendix was found buried in the mesenteric leaf and in the terminal ileum; the distal end which was gangrenous had sloughed off. The appendix was removed and the abdomen was closed with drainage. A notation was made on the operative record that the patient was not expected to recover. She died on the sixth postoperative day. In the second fatal case, in a 61 year old patient, the appendix had sloughed off and a part of it was not recovered. There was appendiceal abscess and a large fecolith. The fecolith only was removed. The abdomen was closed with drainage. The third patient who died was a colored male, aged 20. On opening the abdomen through a McBurney incision it was found that the gangrenous appendix had ruptured and a localized peritonitis was present. The appendix was removed and the abdomen closed without drainage. The patient died on the sixth day after operation. The fourth death in the group was a colored female, 27 years of age. At operation free milky fluid was found in the peritoneal cavity; the distal portion of the appendix was completely gangrenous and there was a large perforation. The appendix was removed and

TABLE II

January 1, 1937 Through December 31, 1939

Number of Cases	Character of Cases	Average Total Stay in Hospital	Average Preoperative Stay in Hospital	Average Postoperative Stay in Hospital	Number of Cases Drained	Deaths	Mortality per 100
1	Normal	10	1	9	0	0	0
428	Subacute & Chronic	9.55	1.32	8.22	0	1	0.23
328	Acute	8.48	0.71	7.77	0	1	0.3
86	Gangrenous	10	0.48	9.56	10	1	1.16
26	Ruptured Appendix with Peritonitis Localized or Generalized	16.70	0.23	16.47	22	4	15.39
21	Appendiceal Abscess	17.19	2.47	14.72	18	2	9.52
890	Total	9.59	1.01	8.58	50	9	1.01

the wound was closed without drainage. The patient died on the fourth postoperative day. The four deaths in this group were attributable to generalized peritonitis. In the entire group of 86 cases presenting gangrene, drainage was established in 10 and in 76 the abdomen was closed without drainage. Two of the four deaths occurred in the group with drainage and two in the group without drainage. We feel now that in the latter two cases the patients' chances would perhaps have been better had we drained.

There were two deaths in the 21 cases with appendiceal abscess—a mortality of 9.52 per cent. In this group the appendix was removed if easily accessible and if a fecolith was felt this was removed. Otherwise, intervention was limited to the placing of a drainage tube. In both fatal cases the cause of death was general peritonitis and intestinal obstruction. One death was in a colored male, 42 years of age; the other in a colored female, 16 years of age. In the latter case the appendix had ruptured and an abscess had formed at its tip. About one dram of thick pus was found. The appendix was removed and the abdomen was closed without drainage. This case is the only one of the group in which drainage was omitted.

The appendix was found normal only once in this second series of cases. The patient recovered from the operation.

In the total of 890 cases there were nine deaths, or a mortality of 1.01 per cent.

The following complications were noted in this series of 890 cases: In 13 cases the operative wound became infected. These infections occurred in abdomens that were closed without drainage. In one case the wound opened and evisceration took place; the patient recovered. Gas bacillus infection of the abdominal wall, gangrene of the abdominal wall, and abdominal abscess occurred in one case each. A pelvic abscess formed in two cases and fecal fistula in two. Upper respiratory tract infection developed in three cases, postoperative pneumonia in 11 cases, collapse of the lung in one case. There was one case of pulmonary embolism and one of bilateral phlebitis. In all, a complication of one sort or another was noted in 38 of the 890 cases.

TABLE III

April 1, 1930 Through December 31, 1939

Number of Cases	Character of Cases	Average Stay in Hospital	Number of Cases Drained	Deaths	Mortality per 100
10	Normal	10.50	0	0	0
777	Subacute & Chronic	10.82	4	5	0.64
526	Acute	10.49	3	3	0.57
158	Gangrenous	11.70	19	3	1.89
71	Ruptured Appendix with Peritonitis Localized or Generalized	15.35	55	11	15.49
46	Appendiceal Abscess	16.44	41	4	8.69
1,588	Total	12.55	106	26	1.63

Combining the two series we have a grand total of 1,588 cases operated on for appendicitis between April 1, 1930, and December 31, 1939, inclusive. One thousand and fifty-eight of the operations were done under general anesthesia, 527 under spinal anesthesia, two under local anesthesia, and one under combined spinal and general anesthesia. Table III presents an analysis of the combined series.

In the grand total of 1,588 cases there are 777 subacute and chronic cases with five deaths or 0.64 per cent mortality; 526 acute cases with three deaths or 0.57 per cent mortality; 158 cases with gnagrenous appendix with three deaths or 1.89 per cent mortality; 71 cases of ruptured appendix with localized or generalized peritonitis present at operation, with 11 deaths or 15.49 per cent mortality, and 46 cases of appendiceal abscess with four deaths or 8.69 per cent mortality. In 10 cases the abdomen was opened on false diagnosis, without mortality. In the grand total of 1,588 cases there were 26 deaths or a total mortality for the combined series of cases of 1.63 per cent.

MORTALITY COMPARISON

A comparison of the mortality rates in Tables I and II shows a remarkable reduction for the three year period, January 1, 1937, through December 31, 1939, over the period of six years and nine months from April 1, 1930, through December 31, 1936, in the subacute and chronic, acute, and gangrenous classifications. In the later period the mortality in the subacute and chronic group is only one-fifth of what it is in the earlier period; in the acute cases it is less than one-third, and in the gangrenous cases less than one-half the rate for the earlier period. It is of course true that the deaths being so few in number one more death in any of these classifications would alter these ratios to an important extent, but against this may be set the fact that these striking reductions in the rate occur in all three of the large groups of cases. In the group with rupture of the appendix and peritonitis there is only a slight reduction in mortality in the second period, and in the cases with appendiceal abscess there is a moderate increase. This last group is, however, so small that it is difficult to judge whether significance should or should not be attached to this increase. The mortality for the entire series in the second period is considerably less than half that in the first period.

IMPORTANCE OF EARLY OPERATION

Our figures throw into sharp relief the importance of operating on acute appendicitis before rupture, abscess or gangrene appear. On this point also our second series shows a gratifying improvement over the first series. While our acute cases increased from 28.4 per cent of the total in the first series to 36.8 per cent of the total in the second series, every other group showed a relative decrease: subacute and chronic from 50.0 per cent to 48.0 per cent, gangrenous from 10.3 per cent to 9.7 pre cent, rupture with peritonitis from 6.4 per cent to 2.9 per cent, appendiceal abscess from 3.7 per cent to 2.3 per cent. The fact that the two groups with the highest mortality, and a mortality which we have not been able to lower, are the groups which are showing the most rapid relative decrease in numbers is especially gratifying.

We have examined recent literature on mortality in appendicitis and the following results are cited.

Haggard and Kirtley[3] report on 2,613 cases of appendicitis operated on at the Haggard Clinic and quote mortality statistics from four university hospitals. For acute appendicitis the mortality was: Haggard Clinic (1915-1938) 0.54 per cent, Minnesota 0.99 per cent, Michigan 0.46 per cent, Iowa 0.37 per cent, Vanderbilt 0.15 per cent, average of the four university hospitals just named 0.49 per cent. Gamble[4] reports one death in 1,788 cases of acute, subacute and chronic appendicitis, yielding the exceedingly low mortality of 0.056 per cent. Reid and Montanus[5]

had a mortality of 1.03 per cent in "acute unruptured" appendicitis.

For acute gangrenous appendicitis Davis and his associates[6] report a mortality of 8.2 per cent. For gangrenous appendicitis with peritonitis McKenna[6] found the death rate 19.0 per cent; for gangrenous appendicitis with rupture, 46.1 per cent. In "acute suppurative" appendicitis Kelly and Watkins[7] had a mortality of 16.4 per cent.

At the Haggard Clinic the mortality of appendicitis localized peritonitis or abscess was 5.7 per cent, of generalized peritonitis 24.8 per cent. The average of the mortality rates of the Minnesota, Michigan, Iowa and Vanderbilt University Hospitals, as quoted by Haggard and Kirtley,[3] was 6.3 per cent for appendiceal abscess, 7.7 per cent for appendicitic local peritonitis, 41.2 per cent for generalized peritonitis (Michigan figures not included in last average). Reid and Montanus'[5] mortality figures for appendiceal abscess are 10.08 per cent and for appendicitic peritonitis 17.22 per cent. Hur's[6] mortality for ruptured appendix with local peritonitis is 10.0 per cent, with diffuse peritonitis 18.5 per cent.

For appendicitis as a whole the following mortality rates have been found: Boland[8] (Atlanta hospitals) 2.30 to seven per cent; Haggard Clinic[3] 3.2 per cent, and the following university hospitals:[3] Minnesota 7.5 per cent, Michigan 4.1 per cent, Iowa 5.2 per cent, Vanderbilt 5.1 per cent; Reid and Montanus[5] 4.86 per cent.

CONCLUSIONS

This analysis of 1,588 cases emphasizes the safety of operation for appendicitis so long as gangrene, rupture or abscess have not developed. In the three years 1937-1939, inclusive, 328 simple acute cases were operated on with a mortality of only 0.3 per cent. For the disease as a whole the mortality for these three years (890 cases) was 1.01 per cent. This figure represents a reduction of considerably more than 100 per cent from the total mortality of a series covering the six years and nine months.

The analysis indicates further that improvement in the general appendicitis mortality must be sought especially in improving the mortality in the groups with gangrene, with rupture and peritonitis, and with appendiceal abscess, and in ultimate elimination of these three groups of cases by early diagnosis and prompt operation in all cases of simple acute appendictiis. The marked reduction in the last three years in the ratio of each of these three groups to the total number of cases of appendicitis coming to operation in our clinic offers encouragement that this elimination can be accomplished.

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Streptococcus Viridans

In spite of newspaper publicity implying that blood transfusions from a patient who has recovered from streptococcus viridans endocarditis (inflammation of the membrane lining the heart) are curative, there is no adequate evidence that such transfusions have resulted in cure, *The Journal of the A.M.A.* for October 5 declares in answer to an inquiry.

In reply to the inquirer's question as to the criteria determining recovery from the disease, *The Journal* says that many patients experience a period of arrest, but only after two or three years of freedom from fever and absence of other symptoms can a patient be considered to have recovered.

THE MANAGEMENT OF ACUTE APPENDICITIS - ARGUMENTS AND CONTROVERSIES*

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IT MAY seem ill-advised to choose for discussion before an audience like this a subject so trite as the management of acute appendicitis. For more than fifty years the profession and the general public have heard so much about appendicitis that wonder may be aroused as to what more can be said. However, those who read the current medical publications know that a great deal is still being said and that the views expressed are by no means always in agreement. The condition itself—acute appendicitis — is so common and so serious, and the public is so generally interested in it, that a statement of the opinions accepted by all surgeons is worth brief restatement. Of greater interest, naturally, is a discussion of those issues in which capable and experienced men differ. These differences of opinion and practice have been accentuated in the past few years. As has been said, wide variations of position on the proper handling of certain phases of acute appendicitis have been taken by writers and speakers on the subject. This has been forcibly impressed upon the present writer, who has the duty of examining young surgeons in various parts of the country. Views have been expressed by some of them in regard to actual patients that have contradicted his own views completely, yet in justice these men cannot be marked down or rejected because they could readily produce respectable authority for their position. Now, it is not generally important as to how an examiner in surgery grades the answers he receives, but it is important that substantial groups of surgeons handle certain frequently occurring and serious situations in diametrically opposite ways. It would be too much to say that one or the other group must be entirely wrong, but surely one or the other method must be better. It is my purpose to examine into these conflicts of opinion and to present my judgment of their relative merits. In so doing, of course, no slightest claim is made for infallibility or even for superior authority. Nor will any effort be made to report extensively the literature on these controversies. It is too vast for analysis without tremendous labor, which in the end would result in nothing but the balancing of massive statistics, impressions and opinions against each other. There would always be a Roland for each Oliver. It seems more interesting and more valuable to analyze the differences of opinion in the light of one man's own modest experience, and to give, for what it is worth, his judgment upon the issue.

To begin with, it may be well to state, especially for the benefit of any of the public that may be interested, that the matters in which there is general agreement far exceed in number and importance the particular and relatively far less numerous situations about which discussion exists. Those accepted views may be outlined briefly as follows:

Of first importance is the fact that if every case of acute appendicitis were properly operated upon before inflammation extends beyond the appendix itself, there would be

*Read before the joint meeting of the West Virginia Medical Association and the Medical Society of Virginia at White Sulphur Springs, West Virginia, July 31, 1940.

little danger and almost no fatality connected with the disease. All are agreed to this. Therefore, the major problem is to arouse the public and the profession to the necessity for prompt surgical consultation in all cases that may be acute appendicitis, and prompt operation if careful consideration leads to the probable diagnosis of this disease. In certain communities, notably Philadelphia, educational campaigns sponsored by the medical profession have resulted in notable improvement in the mortality rates. It may be well to emphasize that a probable diagnosis is justification for prompt operation. There are numerous conditions that may resemble appendicitis, and there is, of course, clear obligation to make as accurate a differential diagnosis as possible. Operation on mere suspicion without proper study is certainly indefensible. But where such study leads to the conclusion that the probable cause of the trouble is an acutely inflamed appendix, the next imperative step is the prompt removal of that organ.

CATHARTICS HARMFUL

All agree that the giving of cathartics, by the doctor or the family, is a very harmful practice. Numerous statistical studies on case histories show clearly the truth of this opinion. It is, therefore, our duty to preach the gospel of withholding cathartics, and indeed everything else by mouth from patients with acute abdominal symptoms until the nature of the trouble has been determined. It will be difficult to convert many people to this doctrine, because purgation for digestive trouble seems an ingrained American habit, but persistence and example in time will accomplish much.

The operation itself should be carefully executed. It is a mistake to presume, as some do, that all cases are easy and simple to handle. I have heard it said that "anybody can take out an appendix." Nothing could be more mistaken. I have also seen men in the very top ranks of surgery sweat and struggle a long while with a difficult appendix, and have felt sure that less able operators would have failed to remove the organ or have done serious damage in removing it.

The disputed situations in acute appendicitis do not arise in the early unruptured cases that we have been considering so far. They develop when for some reason, good or bad, operation has not been performed before the appendix has ruptured. It is in the delayed cases that danger is greatly increased and the mortality rises, and opinions differ greatly as to what to do about it. The very use of the term "delayed" brings up certain points of controversy. Some surgeons regard a case as delayed, depending upon the number of hours or days since onset. Others regard delayed cases as those in which rupture has occurred, irrespective of the time element. And there is a great deal of questioning as to whether one can tell with certainty that rupture has or has not taken place.

It may be well to discuss these issues a little further.

In England, many surgeons divide cases into early or late on a strict time basis, considering all those more than forty-eight hours old as in the late class and making a great difference in the methods by which the two groups of cases are treated. To the present writer this seems a quite unrealistic point of view. Pathological processes do not proceed like railroad time tables. I have seen an appendix already gangrenous four hours after the first symptom was complained of, and, on the other hand, an acute unruptured appendix four days after onset. For me, at least, the time schedule of operating is meaningless.

INDICATIONS OF RUPTURE

That appendiceal rupture has taken place is by no means always easy to recognize. The classical description of a sudden cessation of previous intense pain, followed after an interval by recurrence of pain over a wider area, with increasing tenderness and rigidity, may be accepted as an indication of rupture. The trouble lies in the fact that this clear-cut picture is presented by a minority only of the

cases that do rupture. The same difficulty is found in the attempts to recognize the extent of the peritoneal involvement that follows rupture. Terms such as "localized peritonitis", "spreading peritonitis", "diffuse peritonitis", "generalized peritonitis" are in frequent use. But these terms are descriptive of a pathological process, and thus exactness can only be determined at autopsy. Even the exploration permitted by any rationally conducted operation may not reveal whether peritonitis is "spreading" or really "general." It is all the more true that the clinical diagnosis of the extent of the lesion is very inaccurate. Even the recognition of appendiceal abscess is far from certain. A mass that is suspected of being an abscess may turn out to be omentum adherent about an unruptured appendix, or several other less common resembling conditions, and, on the other hand, a real abscess from rupture of a retrocecal appendix may not be recognizable clinically at all. These uncertainties and impossibilities in the exact diagnosis of the extent of the lesion following appendiceal rupture are not being emphasized because they represent a novel idea. The reason for the emphasis on the uncertainty is because a number of surgeons are urging a difference in the treatment of cases in which appendiceal rupture and peritoneal involvement have occurred. Their point of view will be examined in a moment. The objection to be made here is that the whole basis of their position rests upon the unwarranted assumption that the surgeon can, with reasonable accuracy, recognize the extent and nature of the actual pathological process.

RUPTURE

The school of thought just referred to, which includes a number of excellent surgeons, reasons as follows. As long as the inflammatory process is limited to the appendix itself, its immediate removal is the logical and completely satisfactory treatment of the condition. But when rupture occurs, with soiling of the peritoneum, a new factor is introduced. The patient is much more seriously ill and much less fit to withstand surgical intervention. This intervention itself, by impairing the resistance of the peritoneum and mechanically distributing the invading organisms, may spread the infection further. The surgical trauma to the intestine may promote paralytic ileus, and the anesthetic may do the same thing. Therefore, it is wiser to treat such cases along the lines originally proposed by A. J. Ochsner; namely, deferred operation, nothing by mouth, strict bed rest, ice bags to the abdomen, morphia, and fluids by infusion or by vein. The end hoped for is the spontaneous localization and walling off of the peritoneal infection, then overcoming of its virulence by the native resistance of the patient, and improvement of the patient's general condition. The result of this process is the formation of a well walled-off abscess, and its clinical evidence is the fall in temperature, pulse rate and leucocyte count toward normal, the cessation of pain, nausea and vomiting, the resumption of bowel movement, the localization of tenderness, rigidity and muscle spasm to a limited area, and often the development of a palpable mass—the abscess itself. Those who advocate this general plan of management are all careful to state that it must not be applied to the acute unruptured appendix, which is still to be removed as early as possible. They do not all agree as to just which cases are best treated by deferred operation. Some would operate promptly as long as the peritoneal infection is limited to the immediate vicinity of the appendix but not if it is "spreading" or "diffuse." Others would operate on a "spreading" but not on a "general" peritonitis. Most would operate after abscess formation has become well established, with drainage of the abscess and removal of the appendix, provided this can be done without breaking down the protective adhesions forming the wall of the abscess. If the latter danger is present, simple drainage is done and the patient advised to have

the appendix removed later when all infection has subsided. Nearly all surgeons would agree to this handling of established abscesses, whether they have formed under conservative treatment or are present when the surgeon first sees the case, but even here there is not unanimity. My friend, Dr. E. P. Lehman,[1] of the University of Virginia, feels that the establishment of the abscess marks the end of the dangerous phase of the disease and that many such cases, under careful rest and conservative treatment, may become completely innocuous and may not require surgery at all. They are warned, however, that signs of recurrent trouble should lead to very prompt surgical advice and probable operation.

OPERATIONS vs. WAITING

The writer has presented this theory of treatment of the ruptured appendix at some length and, it is hoped, with fairness, because he disagrees with it entirely. Undoubtedly, many cases will do well under it. Undoubtedly, the statistics presented from some clinics show an improvement since it has been introduced. Undoubtedly, certain individual surgeons, of exceptional judgment and experience in employing it selectively, have shown remarkable results. It is, however, true that other clinics that employ prompt operation in practically all cases, without regard to the assumed stage of peritoneal invasion, can show just as good results as the improved statistics of those who have gone over to the waiting plan. Individual surgeons, working in a different environment, perhaps, and operating promptly, present as good a record as those mentioned above who prefer to wait in this special class of cases. The statistics prove only that in general the author quoting them finds them confirming him in his own opinion. They cannot be used as a basis for relative comparison because too many other factors vary. The surgeon who receives many cases from considerable distances will be impressed by the fact that many of his "late" cases recover under a waiting policy, but it is fair to ask if these are not the hardy survivors with great native resistance, and whether he knows how many people in the same area died of acute appendicitis by waiting and who never saw a surgeon. On the other hand, the surgeon working in a large city, with a well-trained medical group and an intelligent section of the population, who operates early in all cases, may have little personal experience with the advanced, neglected cases. For these and other obvious reasons of inequality of conditions, statistics seem to furnish an unreliable basis for the comparison of these two methods.

"WAITING" PLAN

The writer prefers to challenge the "waiting" plan from the standpoint of its theory, supported by personal experience and the experience of a large institutional clinic with which he is associated. The first objection has been made already; namely, the impossibility in many cases of recognizing exactly the extent of the lesion. To wait on an acute unruptured appendix in the mistaken belief that there is already a perforation and spreading peritonitis defeats the very purpose of the expectant plan of treatment, yet this may happen readily enough. The waiting plan seems to me fallacious, not only because of uncertainty of diagnosis but because it relies on nature to take care of the damage done by a ruptured appendix, and does not promptly remove the source of that damage, the leaking appendix itself. It is difficult for me to believe that a properly conducted operation is as harmful to the patient's chances of recovery as allowing continued infection to enter the peritoneal cavity from a perforated viscus. It may be true that ill-advised methods of operation do harm in such a situation but the principles to be followed have been enunciated many times. The incision should nearly always be of the McBurney type. No general exploring should be done; in fact, the least possible manipulation to remove the appendix is the ideal. A cigarette drain sheathed in very thin flexible rubber

of the Penrose type is placed against the lateral peritoneum downward toward the pelvis, or upward toward the lumbar fossa, or both if there is soiling in both directions. The wound is closed loosely with interrupted fine catgut sutures. To these operative measures are added the supportive general treatment upon which alone the "expectant" advocates rely—fluids, gastrointestinal decompression by nasal tube, morphia, heat to the abdomen. The writer does not wish to give the impression that there is never a situation resulting from appendicitis in which delay of operation should not be advised. But he does feel that in these rare cases the reason for delay does not depend directly upon the extent or nature of the local lesion in the appendix or the peritoneum. It depends upon the patient's general condition. If the patient is dehydrated from persistent vomiting, is suffering from loss of chlorides, has a marked paralytic ileus, a weak, thready pulse, failing blood pressure, in short, is so gravely ill that he is in no shape to stand any surgical procedure, naturally waiting is necessary. If restorative treatment improves his ability to sustain operation, it should be undertaken without regard to any theoretical assumption that the peritoneal process has or has not become delimited. These statements are made, not to be dogmatic, but to outline clearly a personal program of handling acute appendicitis.

EFFECTS OF DELAYED TREATMENT

The greatest objection to the teaching of delay in certain complications of appendicitis is in its effect upon the general profession and the public. A few highly experienced surgeons, watching a patient in a hospital with every facility for constant study and instant surgical intervention, may satisfy themselves of the wisdom of expectant treatment in a limited group of appendicitis cases. They are usually scrupulously careful to teach and apply this method only in this limited group of cases. In spite of their best intentions, however, the effect of their teaching and example is to encourage the general practitioner and the layman to alter his views about the urgency of operation in acute appendicitis. A laborious campaign of education has produced some results in bringing appendix cases early to the surgeon. All agree that this is the most effective single agency in reducing the mortality of the disease. If now the word goes around that the well known surgeon, Doctor X, sometimes waits on his cases until the severe symptoms subside, there is a very human tendency for general practitioner, Dr. Y, and patient, Mr. John Doe, to say to himself, "If waiting is the thing, why not wait at home, and save a lot of trouble and expense?" It is a little too much to expect either of these gentlemen to recognize the distinction between an acute gangrenous, but as yet unruptured appendix, on the one hand, and a ruptured appendix with spreading peritonitis, on the other. As was said above, it is a differentiation that the best surgeon cannot always make with certainty.

PROMPT OPERATION

The plan of prompt operation in practically all cases has been practiced by the writer and most of his surgical friends in Baltimore for many years. It is also the method employed in the Johns Hopkins Hospital. Papers in the past giving some statistical studies have been published by Dr. J. M. T. Finney, Jr.,[2] and the present writer.[3] The most recent such study has been made by Dr. Edward S. Stafford and Dr. David H. Sprong[4] from the material of the Johns Hopkins Hospital. There were no deaths in 838 cases of acute appendicitis without perforation. This result is, of course, due in part to good fortune, because although the mortality rate should be low, one would expect in such a large group of cases at least one or two of the unpreventable accidents that may attend any operation. In 479 cases with abscess or peritonitis, the mortality rate was 10 per cent. The writers consider that some of these deaths might have been prevented by more careful diagnosis and

better treatment of postoperative complications. They point out, however, that even so these mortality rates are better than the average reported for the delayed or expectant treatment of perforative appendicitis, and feel justified in continuing to perform immediate operation in the treatment of appendicitis.

DISCUSSION

Dr. Robert King Buford, Charleston: Going over our records for the past 20 years we have gained certain impressions. Early in that period we employed the Murphy drip. We believe its use resulted in diffusing many cases of localized peritonitis by increasing peristalsis. We no longer use proctoclysis. Instead we give all of our fluids intravenously or subcutaneously. Another thing that has interested me very much has been the subject of drainage. As both an intern and resident I could not get any unanimity of opinion from my chiefs as to when to remove a drain or how long a case should be drained, and in my visits throughout the country to clinics, I still find the question of drainage is very much in a state of chaos. Some very able men show you low mortalities, who remove drains in 24 to 48 hours; others leave the drains in for six or seven days. I think probably some of these cases get well in spite of the surgery or the type of treatment that they receive.

Years ago following prolonged drainage, we had more complications, more obstructions than we have had during the past 15 years. During this latter period our attitude has been that if the peritoneum is intact drainage is not indicated. Another point I would like to emphasize is the question of postoperative care. For several years now, in a case of peritonitis, when the patient returns to the room and sometimes before operation, the Levine tube is passed and we keep up continuous decompression by the Wangensteen method.

We do careful evaluation of blood chemistry, especially non-protein nitrogen and chlorides, and determine if the patient has any anemia. If we have overdone anything it has been in the giving of blood transfusions, and we feel that we have been well repaid.

Our series in a period of 20 years shows a total of 1,526 cases of acute appendicitis operated as emergency cases; 229 were perforated; 64 showed appendiceal abscesses. The majority of the cases—32—were handled by the two-stage method, i. e., drainage of the abscess and appendectomy three or four months later. There was no mortality in that group. In 10 cases where the abscess was not well walled off we were able to remove the appendix at the time of operation. The mortality of the perforated cases was four per cent. The mortality of the total combined series was a little less than one per cent.

I am indebted to my associate, Dr. Bailey, for the statistics from one of our local hospitals. These figures represent the work of several surgeons. In 1939 there were 225 cases of acute appendicitis. There were 13 abscesses, 29 perforations, and 27 cases of gangrene. Mortality was 1.4 per cent. There were 215 cases of chronic appendicitis in the same institution with no operative mortality.

Dr. J. Bolling Jones, Petersburg: When I first joined the society a great many years ago typhoid fever and appendicitis always provoked the most attention at our meetings. Science has eliminated typhoid fever but appendicitis will probably remain as long as mankind has an appendix.

It is universally admitted that early diagnosis and early operation give best results, but it is not always possible to make an early diagnosis. One of the most frequent causes of delay in diagnosis is the fact that the appendix does not always occupy the same position in the abdomen. On two occasions I have operated on infants with strangulated inguinal hernia with the head of the cecum and the appendix in the strangulated hernial sac on the left side. It is well known that the appendix may be down in the pelvis, in the region of the kidney, in the region up under the liver, or it may be stretched across the abdomen to the left. I believe that anomalous positions of the appendix are largely the cause or are certainly one of the elements of delay in arriving at correct diagnosis.

I still see a good many abscesses. They vary in location as does the appendix. When I encounter an abscess, it is my usual practice to drain. If an appendiceal abscess is in the pelvis I do it through a vaginal if it is a female, circle the cervix, put in a pair of forceps, let out an enormous amount of pus, stick in a drain, and the patient is well before you know it. I cannot see how it would be wise to go further and go back in the belly and remove such a bad appendix at that time, and I do not believe it would be wise to go across the belly and open that abscess primarily. In dealing with a small abscess, of course the appendix is removed. However, even

in small abscesses, I have been able to drain extraperitoneally, following down around behind the head of the cecum and breaking into it and removing the pus, and the appendix is removed later.

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18 W. Franklin St.

A CONCEPTION OF CANCER AS RELATED TO PREOPERATIVE IRRADIATION*

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CANCER has been studied by the surgeon, the pathologist, the radiologist and the biochemist. The extirpation of malignant disease by the surgeon has served two purposes; namely, as a therapeutic measure, and at the same time providing the diseased tissue for study by the microscopist. As a result of this an untold amount of pain and suffering has been controlled and numbers of lives spared, and a tremendous knowledge of the cancer process has been revealed to both the pathologist and the surgeon. But once removed, cancer cells are dead, and the microscopist has been forced to interpret life in terms of death, to attempt explanation of fundamental life processes in terms of cellular morphology and staining characteristics in tissue inseparably removed from its host.

The radiation therapist, on the other hand, has been more fortunate. He has had the unique privilege of observing living cancer, growing cancer and dying cancer. This is particularly true in present methods of protracted fractionated irradiation techniques where he has had an opportunity to observe daily the results of cellular destruction both as it relates to the local manifestation of the disease and to the organism as a whole. These observations, in conjunction with the knowledge gained by the surgeon and pathologist, have thrown light on many facts and theoretical considerations that constitute definite contributions to a more thorough understanding of the subject.

THE AUTHOR

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One of the most fundamental observations of the effect of radiant energy upon cells is that some tissues are more liable to destruction than others. Furthermore, in neoplasms it is also found that cells in an immature state, or cells showing the most mitotic activity, are more susceptible to destruction than adult cells. In normal tissue the white blood cells and their precursors, and the ovary and the testis are among the most sensitive cells that we find, and as a consequence tumors derived from these organs, or cells, manifest a degree of sensitivity paralleling that of their precursor.

On the other hand, cells of a high degree of differentiation may show little or no response to radiation. This is best illustrated by nerve cells, which are probably the most highly specialized cells in all the body. Their rate of division is extremely slow, if it occurs at all. Tumors derived from nerve cells

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manifest this same degree of invulnerability to x-ray or radium.

As a consequence of these observations, the terms "radio-resistance" and "radio-sensitivity" have come into common usage, in referring to cellular and tissue response to radiation. It naturally follows that we should attempt to correlate cellular characteristics as shown under the microscope and denoted as differentiation and undifferentiation, in terms of radiosensitivity. In general, it is assumed that for any given type of tumor undifferentiation parallels radiosensitivity, and differentiation parallels radioresistance. This has not been found to be absolutely true. There are other factors present which have a profound influence upon the response of tumors to radiation. The relationship of the tumor to the type of tissue constituting the tumor bed is a factor having a profound influence upon the type of response which may be elicited, and this highly important factor, the microscopist, through no fault of his own, is unable to evaluate.

CHARACTERISTICS OF TUMORS

Certain tumors seem to have the inherent property, at a very early stage, to show marked invasiveness or infiltrative characteristics, while others seem content to grow in a fungating manner, to expand in the areas of least resistance and as a consequence invade late or not at all. These two factors are extremely important as a determinant of tumor response. This has been pointed out by Coutard, and the best example is shown in squamous cell carcinomata developing in the region of the tonsil and the anterior pillar. Take, for instance, a squamous cell carcinoma developing in the tonsil. These lesions often grow to quite a considerable size and project far into the fauces without symptoms; they tend to metastasize quite early. The tumor bed here consists of the loose, very vascular lymphoid stroma of the normal tonsil. Under the influence of radiation therapy they show a prompt early diminution in size, and they almost invariably disappear completely and leave scarcely any scarring. Contrast this to an epithelioma of almost identical cellular characteristics developing on the anterior pillar of the tonsil, an area only a few millimeters distant from the tonsil itself. Here we have a dense, fibroelastic muscular stroma relatively avascular as compared to the tonsil. An epithelioma developing here shows invasive properties almost immediately. Early, the patient will have pain and may even have a certain degree of trismus entirely out of proportion to the size of the lesion. These last named lesions are most difficult, if not impossible, to destroy by radiation. A dosage sufficient to destroy these lesions will surely produce a total necrosis of the entire tumor with no possibility of repair.

Certain tumors of the true vocal cord, and infiltrating tumors of the bladder, exhibit these invasive tendencies to a greater or lesser extent. On the other hand, the large fungating tumors of the cervix uteri, of the laryngeal vestibule and the nasopharynx all tend to a marked early and complete disappearance under the influence of radiation.

The blood supply to the tumor has a direct bearing upon its sensitivity. A memorable experiment performed by Jolie demonstrates this fact quite well. He ligated the blood supply to one side of the thymus in a pigeon and after subjecting this area to a course of x-ray therapy it was found that the response on the unligated, or the vascular, side was far more pronounced than on the ligated side.

It is extremely interesting to observe the effect of these two different types of tumors upon the organism as a whole. At the one extreme, for instance, the relatively small infiltrating carcinomata of the true vocal cord, of the anterior pillar and of the stomach producing marked pain, cachexia and loss of weight, while we may have a tremendously large tumor developing in the laryngeal vestibule with the patient entirely unaware of any difficulty until he develops a sudden almost complete laryngeal obstruction. All of us have seen women whose first sign of

trouble was a sudden severe vaginal hemorrhage and upon examination find a fungating carcinoma of the cervix almost completely filling the vagina. One of the most amazing phenomena that we observe is the reaction of the body to the lymphosarcomata. It it not uncommon, and is, in fact, an excellent diagnostic point, to observe a patient in the terminal stages of a generalized lymphosarcomatosis and with almost total involvement of all of the glands in the body, going about his business and experiencing no discomfort other than a mild malaise.

X-RAY THERAPY

The modification of tumors under the influence of x-ray therapy is also worthy of note. Consider, for instance, cancer of the breast. The primary effects are always noted on the periphery of the tumor. The edges and the surface next to the skin begin to soften and diminish in size while the center remains hard and firm. When the maximum dosage has been given, and if the tumor fails to disappear completely, there is always a relatively small portion remaining which corresponds to the center of the original tumor. We thus gain the impression that the most sensitive cells, those that are most immature and showing the greatest mitotic activity, must be on the periphery of the tumor, and conversely, the more adult differentiated cells in the central portion. We further assume that growth must occur from the center outward, toward the periphery. Consider this in contrast to the disappearance of glandular metastases from a lymphosarcoma, one of the most sensitive tumors with which we have to deal. When one of the glands is subjected to a course of x-ray therapy there is always a prompt constant diminution in the tumor which seems to involve all portions equally and uniformly.

Another very important factor to be considered in malignant disease is that of infection. Ulcerating carcinomata of the tonsil, large bowel, the uterus and of the skin are always secondarily infected. This is particularly true in carcinoma of the cervix uteri and of the colon. Much of the parametrial fixation in carcinoma of the cervix often proves to be purely inflammatory and must be taken into consideration when classifying them as to their stage of malignancy. The inflammatory elements in carcinoma of the large bowel often constitute the major portion of their bulk when removed at operation. The beneficial effects of radiation upon infection is well known. The prompt response of carbuncles, parotitis, cellulitis and septic sore throat are a few of the many examples of this beneficial action that could be cited. Regarding infection in cancer, Ewing states: "Infection greatly facilitates and aggravates extensions of squamous carcinoma. If we could sterilize these ulcerating lesions, we would remove one of the chief factors in their active growth, but this is not one of the fields of medicine in which methods of refinement are generally involved. Cancer is an emergency, and we go at it rather heavily and cut it out or give it a knockout dose of radium, but I trust that the time will come when a very careful control of infection is regarded as essential."

I have attempted to clarify the concept of cancer as it is seen by the radiologist. This concept has come about through observation by the clinician, the surgeon, the pathologist, the researchist and lastly by the repeated daily observations by the radiologist in the course of treatment for the various malignant diseases. I have attempted to demonstrate how the factors of cellular differentiation, infiltration, character of tumor bed and infection all play an important rôle in the cancer process, and how these factors influence the response of these tumors to radiant energy.

Past experience has taught us that certain tumors are best handled by surgery only, while others are best treated by radiation.

As a general rule the extremely sensitive tumors, such as the lymphosarcoma, lymphoepithelioma and squamous carcinoma arising in or about Waldeyer's ring, are relegated to the radiologist. Surgical extirpation of these

lesions is almost always followed by local recurrence and regional metastasis, whereas they are readily amenable to radiation. On the other hand, lesions on the anterior dorsum of the tongue, infiltrating carcinomata of the true vocal cord and tumors of the nervous system are problems for the surgeon.

There are, then, a large number of malignancies developing in various other organs and tissues in which adequate surgery has produced only intermediate results. Adequate radiation in the same group offers the same or less. It is in this group that radiation therapy as an adjunct to surgery offers additional hope in the successful management. As I indicated earlier, any given type of malignancy is composed of differentiated and undifferentiated cells in varying proportions, and all tumors, with the possible exception of certain neurogenic tumors, manifest a response to radiation in proportion to their degree of sensitivity. Let me say here that radiosensitivity does not necessarily mean radiocurability. Many of the most sensitive lesions metastasize very early, placing them beyond hope of cure by any method.

It would seem logical to assume, then, that if we could reduce the bulk of these tumors by destroying the more sensitive elements, the problem of the surgeon would be made much easier and the danger of dissemination at the time of operation would be reduced. If infection is present, knowing the markedly beneficial effect of radiation here, it would seem again that the patient's general condition might be improved and the operative risk markedly reduced.

RADIATION THERAPY

With the above object in mind I propose to discuss those lesions in which a course of radiation therapy is theoretically and practically of value as a preliminary procedure to surgical intervention.

It has been shown conclusively that the combined approach offers the best prognosis in the treatment of carcinoma of the body of the uterus. They are invariably slow growing tumors, histologically adenocarcinomata, and the results from either surgery or radiation are only fair. If the lesions are technically operable we routinely give an initial application of radium by means of a tandem inserted into the uterine cavity with a total dosage of 4,800 mg. hours. After a period of six weeks to two months we then recommend that a panhysterectomy be performed. With this procedure a very high percentage of cures may be anticipated in operable cases. In borderline operable cases it is sometimes advisable to give a course of external radiation therapy in addition to the radium as a preoperative measure. If the total dose is about one-half that which would constitute a maximum, no interference with wound healing can be anticipated at the time of operation.

CARCINOMA OF THE OVARY

In dealing with carcinoma of the ovary irradiation is given as a postoperative measure. In this instance operation is almost invariably both a diagnostic and a therapeutic procedure. The solid tumors of the ovary, particularly the seminomas, show a striking response to radiation and, if suspected, a great deal of good may be accomplished by radiation preliminary to surgical removal.

Tumors of the testicle are almost invariably extremely radiosensitive. Dean, by use of preoperative irradiation and irradiation only, was able to report 29 per cent five year controls in 170 cases treated.

In carcinoma of the kidney we have never been able to produce a complete sterilization with radiation alone. Surgical statistics are not in the least encouraging. The Wilm's tumor in children is a remarkably sensitive tumor and will often disappear completely under the influence of radiation. To my knowledge there has never been a cure by this means alone, however. The customary procedure in this type is to give a brief course of radiation and then remove the tumor when the maximum regression has been obtained. We advocate a course of radiation followed by removal in all cases of suspected kidney

malignancy. We have been able invariably to stop hematuria when it has existed in conjunction with these lesions. This, in itself, is evidence of a beneficial effect. It is often extremely difficult to demonstrate actual diminution in the size of the tumor either by palpation or by x-ray examination.

We have treated a large number of bladder tumors by all types of procedures. The large papillary carcinomata always show considerable regression, if not complete disappearance, if sufficient radiation is given. We prefer, in these cases, to administer a maximum dosage of x-ray therapy to the bladder area, and after the reaction has subsided the patient is cystoscoped by the urologist and if any evidence of tumor remains this is destroyed by fulguration.

Carcinomata of the colon are usually much larger and more extensive than anticipated by radiologic or physical examination. Much of their bulk is composed of inflammatory cells and radiosensitive elements. These patients many times have a degree of partial or almost complete obstruction. If we can diminish the bulk of the tumor and reduce the inflammatory elements, the patient's general condition will be improved and the operative procedures facilitated with far less risk to the patient. Many times palpable abdominal masses are not connected with the gastrointestinal tract and when they show marked diminution under x-ray therapy we have strongly suggestive evidence that this must be an abdominal manifestation of one of the lymphomata.

With the exception of epitheliomata of the skin we see more breast tumors than any other form of malignancy. No other group of tumor presents such a multitude of problems, the first of which is to establish a diagnosis. I frankly admit that we find this extremely difficult, and when the diagnosis is easy we are usually confronted with an advanced malignancy. The vast majority of cases of clinical malignancy in the breast that we see has already spread to the axilla or further.

The reports of surgical statistics in cancer of the breast where the radical Halstead operation was done are quite uniform from various authors, with the following figures: Seventy per cent five year control with no axillary involvement, 30 per cent with low axillary involvement, 20 per cent with mid-axillary glands involved and 10 per cent when high axillary glands are involved. Unfortunately, as I have said, most of these patients have already had glandular involvement so that the total five year salvage is very low. Furthermore, many of these cases live five years and later die of cancer. The picture is not at all pleasant to behold. In an attempt to improve the end results radiation therapy given postoperatively was tried as an adjunct. Opinions varied as to whether any good was accomplished by this means. Personally, I am extremely doubtful if the end results justify the procedure. At least it has been abandoned in most clinics. For reasons that I have discussed previously, preoperative irradiation was tried and has gained in favor with most radiologists and many surgeons. Sufficient data has not accumulated to date to warrant an opinion as to whether the ultimate survival rate will be greater as a result of this approach.

BREAST MALIGNANCY

We advocate the administration of a preliminary dose of x-ray therapy in all cases of suspected breast malignancy. The treatment is so designed that the entire involved breast and axillary lymphatic drainage areas are included in the treatment zone, with a sufficient total dosage to provoke a moderate reaction upon the skin. This is followed by an amputation within six weeks to two months following x-ray therapy, i. e., when the skin has entirely healed.

This procedure serves as a diagnostic measure in instances where the diagnosis is questionable. If no change at all is noted in the tumor following radiation it is more than likely that the lesion is non-malignant. On the other hand, some of these tumors dis-

appear completely, manifesting a degree of sensitivity almost equal to the lymphomata. It is perhaps better if surgery is not done in these cases due to the marked tendency of tumors of this type to generalized dissemination as result of operative intervention.

I have tried to mention all the particular lesions in which preoperative irradiation is practical and desirable. The general course of procedure in these is all the same. We endeavor to give a complete course of irradiation in a period of ten days to two weeks' time. Sometimes this means treating the patient twice daily. The total dose given in any instance should be sufficient to provoke either a deep erythema or a dry desquamation of the skin, which will usually appear in three weeks from the beginning of the treatment and should be entirely healed by five weeks after the beginning of treatment. We feel that the optimum time for operation is as soon as possible after the skin has healed, inasmuch as too long delay in operation will give these cells a chance to regenerate and begin active growth.

I want to conclude by saying that we must have no illusions regarding cancer. Admitting that great refinement has been made in both the diagnosis and treatment of malignant disease, we must admit that a contemplation of either phase is not conducive to any feeling of great satisfaction. The concepts that I have outlined tonight can only be valued in the light of our present knowledge of the subject and I sincerely hope that in time we will be provided with a far more adequate weapon with which to control this disease.

1835 I. St., N. W.

TRAUMATIC APPENDICITIS: REPORT OF CASE

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In recent years traumatic appendicitis has been held to be a compensable injury by the courts and this fact coupled with the sharpened interest in the minds of investigators throughout the country will tend in time to make traumatic lesions of the appendix less of an oddity.

The courts have favored the plaintiff in the ratio of five to one and of two to one, respectively, in cases of direct and indirect injury. Fowler[10] made a survey of opinions from various sources and 56 per cent of the physicians accepted a secondary relationship; 24 per cent a primary relationship and 20 per cent denied any relation of trauma. That 80 per cent accepted the relationship of trauma to appendicitis seems to be significant.

More important, from the patient's viewpoint, is a prompt recognition of appendiceal lesions when preceded by trauma regardless of the connection. Procrastination in these cases is equally as fatal and in 16 cases of a series of 50, the appendiceal involvement was not recognized clinically and the mortality rate was 50 per cent.[6]

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MECHANISM

It is conceded that previous attacks of appendicitis with resulting adhesions favor, not only traumatic appendicitis, but also various lesions of the appendix and its mesentery. That the appendix can be subjected to direct trauma has been shown by C. M. Burgess,[7] who reported the case of a workman who rested the butt of a pneumatic drill against the right lower quadrant; following this he

doubled up with pain. At operation the tip of the appendix was found to have been amputated. Old adhesions were found which held the appendix securely bound down.

From the above it seems logical that a less severe blow over the appendix, even though the appendix is mobile, could rupture the mucosa and allow the entrance of bacteria into its wall, the evidence of traumatic injury being masked by infection at the time of the pathologic examination of the specimen.

A blow anywhere on the abdomen may produce a condition which is severe enough to increase the intraluminary appendicular pressure by compressing the intra-abdominal space. Curving of the appendix by adhesions may predispose to rupture of the mucosa when the increased intraluminary pressure suddenly straightens the organs. The mechanism is explained by Behan,[1] who states that if the colon and cecum are filled with gas, some of the fecal contents may be forced into the lumen of the appendix with rupture of the mucosa, extravasation and resulting infection. Rupture of the mucosa has been shown to occur experimentally by light manual pressure over the cecum which forced fecal contents into the lumen of the appendix.[2]

Should a fecolith be forced into the appendix or one already present be forced deeper into the lumen, damming up fluid between it and the distal end of the appendix, a closed loop obstruction results with consequent congestion and edema of the walls due to pressure on the veins. The fecolith may result in pressure necrosis or the secretion of fluid into the appendix distal to the obstruction which may lead to gangrene and perforation.

MECHANICAL ILEUS

Van Buren,[3] experimenting on dogs, showed that increasing the intra-abdominal pressure resulted in pressure hemorrhage along the antimesenteric surface of the intestines. In cases of mechanical ileus, studied clinically, perforation was noted on the antimesenteric surface. Sudden contraction of the abdominal muscles in warding off a blow is thought to have the same effect as the blow itself. This sudden contraction may also occur in lifting, catching or holding extremely heavy objects.

In the following cases the symptoms began immediately after the injury and continued until operation. This resumé is presented to illustrate the various types of injuries which have been followed by appendiceal inflammation.

INFLAMMATION FOLLOWING INJURY

A nursemaid developed right-sided pain and vomiting immediately after lifting a heavy basket. The acute attack persisted for eight days. Thirty-six hours before admission she was kicked in the right side by a child followed by the immediate recurrence of symptoms. At operation a gangrenous appendix was found lying in an abscess.[12]

A healthy adult male was pinned between a stair post and the corner of a casket which he was carrying. At operation the appendix was found acutely inflamed.[15]

A patient, while lifting pipe, slipped and his abdomen became wedged between the rims of heavy mains with the weight and impact of the pipe coming down on his abdomen. A retrocecal, ruptured appendix was found with spreading peritonitis.[16]

Goldbeck reported a necropsy on a boy showing perforation of a gangrenous appendix eight days following a fall from a wagon.[17]

A healthy male, with no previous abdominal complaints, was thrown against the door handle of a car with the handle striking him in the right lower quadrant. At operation the appendix was found acutely inflamed.[13]

A 26-year-old white male previously in good health was struck by an automobile, knocking him against the rear of a wagon. Several days later a bruised condition of the abdominal muscles was found with a bruise of the ascending colon at and immediately above the ileocecal valve. The appendix was acutely inflamed.[18]

A 14-year-old male, previously free from abdominal pain, fell forward, striking his abdomen upon a rock. The appendix was

found to be perforated opposite the point of attachment of the mesentery and a concretion was found in the abscess cavity.[11]

While wrestling a 19-year-old boy's abdomen was jumped upon by his opponent; no previous abdominal complaints. The appendix had perforated near the tip of the antimesenteric side; a fecolith was found in the pus.[2]

A 14-year-old white male with no abdominal complaints prior to injury was kicked in the lower right quadrant while playing basketball. Grossly the appendix was gangrenous. Microscopic sections revealed gangrene and purulent exudate with an occasional small blood vessel thrombotic.

It has been stated that the pathological condition cannot be differentiated from other types of appendicitis.[5] In each of four reported cases a concretion was recovered which has presumably perforated the appendix and in each case the perforation was found opposite the mesentery.[11] Frequently examination of the appendix has revealed the mucosa lying partially free in its lumen as though pus had dissected it free from the submucosa.[1]

CASE REPORT

The patient a white, American, male, miner, age 22 years, was admitted to the hospital with constant, dull, aching pain in the lower right quadrant of the abdomen. The pain began 72 hours before admission when the patient was struck in the lower right quadrant of the abdomen while boxing. Since the blow the pain has been constant, dull, aching and occasionally cramping in character. It was not accompanied by nausea and vomiting and not severe enough to cause him to bend over for relief. There had been some constipation since the blow but no cathartics had been taken; he was given an enema prior to admission. The past medical history with particular reference to possible appendiceal lesions was negative. Examination revealed a well developed, young, white, adult male resting quietly in bed and not appearing acutely ill. Temperature 98.6 degree F., pulse 80, respirations 20, blood pressure 120/70. Examination with the exception of the abdomen was essentially negative. The abdomen was symmetrical, flat and moved freely with respirations; no distension or muscular rigidity was present. There was marked tenderness to palpation with muscular resistance in the lower right quadrant. The point of maximum tenderness was over McBurney's point. Murphy's and Blumberg's signs were positive. The psoas test was negative. Rectal examination was negative. Urine specimen revealed nothing abnormal. Hematological survey: Red blood cells 5,300,000, hemoglobin 104 per cent (Sahli), white blood cells 10,600, segmenters 74, no non-segmented cells, lymphocytes 22, basophiles, five; eosinophiles, five; monocytes, three; sedimentation time (Westergren) was normal.

At operation, 74 hours after injury, the peritoneum was found to be slightly reddened and there was a moderate amount of greenish-yellow, thin fluid around the cecum. Smears were made and cultures obtained. The appendix was retrocecal and free. The entire appendix was reddened, edematous and rigid. The mesentery was thickened and somewhat congested.

The appendix was red, edematous and tense with the process involving the mesentery. On sectioning the walls were thickened and in the proximal portion there was ulceration extending almost to the mucosal covering. In the distal one-third the lumen was grossly obliterated.

Microscopic: Sections showed ulceration of the mucosa and submucosa with neutrophilic infiltration and early necrosis. This process extended into the mucosal layers and the serosa had joined in the reaction, being covered by fibrin. The sections through the mucosal and submucosal layers by fibrous tissue showed scattered inflammatory cells.

Diagnosis: Chronic appendicitis of the distal part and acute ulcerative appendicitis of the proximal part.

DISCUSSION

"Traumatic lesions which reveal no evidence of superimposed infection should be designated as such, and not as traumatic appendicitis, unless it has been proven beyond doubt that the necessary inflammatory reaction is a sequence."[10] Since there is no definite pathological picture presented by traumatic appendicitis, the history is of major importance. The symptoms should immediately follow the injury and be progressive, but the "latent period" as in any other case of appendicitis should be kept in mind. Both direct and indirect trauma should be sudden and whether or not the injury is expected or un-

expected should make little difference as long as the blow is severe enough. A relaxed abdomen predisposes to a more severe injury. A sudden, forceful contraction of the abdominal muscles as a protective measure may have the opposite effect by suddenly increasing the intra-abdominal and intraluminary pressure of the gut. A history of previous abdominal symptoms, but not of recent symptoms, may be significant.

SUMMARY

1. Traumatic appendicitis has become a compensable injury.

2. The consensus of opinion is that the condition is a clinical entity.

3. The courts have favored the plaintiff in a ratio of five to one and two to one in cases of direct and indirect injury, respectively.

4. Previous attacks of appendicitis with resulting adhesions favor "traumatic appendicopathy" and traumatic appendicitis.

5. A blow directly over or remote from the appendix, or strain involving the sudden contraction of the abdominal muscles is significant; the mechanism of which has been explained.

6. The appendix is not so well protected that it may not be injured directly as shown by reported case.

7. Traumatic appendicitis will subsequently become less of a rarity in the mind of the physician as more cases are reported, even though the incidence remains the same.

8. The importance to the patient's well-being is not that appendicitis has been caused by a blow or strain, but that appendicitis is present; procrastination may be fatal.

9. Traumatic appendicitis in contradistinction to traumatic appendicopathy is not a pathological entity.

10. Traumatic lesions without superimposed appendicitis should be designated as such and not as traumatic appendicitis.

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Blood Plasma For Transfusions

A new and economical process for drying human blood plasma after it has been frozen, to preserve it for use as a substitute for whole blood in transfusion, is described in *The Journal of the American Medical Association* for September 28 by Earl W. Flosdorf, Ph.D., F. J. Stokes, M.A., and Stuart Mudd, M.D., Philadelphia, who emphasize its importance in time of war.

Plasma is the liquid portion of the blood before clotting. "In dry form resulting from desiccation (drying) from the frozen state," the authors say, "the plasma proteins may be maintained in highly stabilized form, without refrigeration except for long time reserve-storage, and are instantly available for use by dissloving in water to the original or to a more concentrated volume. War-time emergency increases the importance of ready availability of large reserves of this agent in the dry stabilized form."

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Each case of tuberculosis presents its own peculiar problems and no two cases are alike. The physician concentrates his attention on the particular case before him and studies the reactions generated by infection with the tubercle bacillus of that individual. While he is not directly concerned with the broad biologic principles of this age-old mass epidemic, he does gain a better insight into the individual pathogenetic factors by keeping in mind which epidemiologic factors are responsible for the changes, the increase and decrease in tuberculosis. Max Pinner has sketched some of these trends in a recent article, from which these abstracts are derived.

Epidemiological Trends of Tuberculosis

The epidemic, tuberculosis, is "young" when it makes its first encounter with a population; it "matures" when its contact has become fairly universal for a few generations and it is "old" when the population as a whole has become sufficiently resistant to its ravages that the death rate falls rapidly. Earliest childhood, maturity and senescence of tuberculosis are represented by the early invasion by tuberculosis of certain African tribes and a group of American Indians, the American Negro and our own white population.

Wherever tuberculosis strikes first, it is in primitive societies. By "primitive" is meant a society previously not or hardly in contact with the occidental civilization and a society that for a long period has lived in essentially unchanged, settled conditions—a population without history in the common sense of the word. Tuberculosis never comes alone to an untouched population; it always comes accompanied by, and rather through, agents of occidental civilization. It is, therefore, always associated with profound changes and disturbances of tribal life. These changes play a most significant rôle in shaping the epidemic features.

Borrel reports that a portion of Senegalese troops were tested with tuberculin upon arrival in France during the last war, and only four to five per cent reacted. Many of these men were observed at a later date as tuberculous patients and on the autopsy table. The general picture was about as follows: Following a certain period without evident clinical symptoms, during which swellings of supraclavicular and tracheobronchial lymph nodes can be observed, the disease develops rapidly with toxemia, high fever, weakness and multiple organ involvement, which in 70 per cent leads to death. At autopsy, diffuse caseation of multiple groups of lymph nodes is dominant in 70 per cent to 90 per cent of the cases. One-fourth of the patients died of generalized miliary tuberculosis and, in a large proportion of the remainder, diffuse caseous foci were present. Here is a form of disease characterized clinically by the predominance of systemic over local symptoms, by the rapidity of its course and its high fatality. The characteristics are generalization, diffuse caseation and the absence of reparative processes.

However, the majority of Senegalese neither acquired nor died of tuberculous disease and it is safe to assume that many healthy reactors returned to Africa, proving their resistance to tuberculous infection.

A somewhat later stage, that of practically universal infection, is represented by an epidemic among certain Indian tribes of the Canadian plains. Following a period (1850-1880) in which there were only sporadic cases of tuberculosis, the epidemic reached its height between 1884 and 1890, during which time one out of three Indians had visible lymph node swelling and by 1906 about 20 per cent of the school children in Qu'Apelle were operated upon for tuberculous nodes. The death rate rose from 1,000 in 1881 to 9,000 in 1886, falling to 2,000 in 1901, to 1,000 in 1907, and following the establishment of anti-tuberculosis work in 1930, it reached 270 in 1931-32.

The most complete epidemiological studies of tuberculosis in a relatively primitive society were made on the South African tribes that provide the laborers for the mining industry in South Africa. These studies are reviewed by the author. He points out that the epidemiological picture of South African natives is not a uniform one as these natives have been observed under three different living conditions, namely, in their native villages, during labor service in mines and during war service in France. Hence, observations limited to only one of the three localities would lead to an incomplete and biased impression.

A more mature stage of the epidemic is illustrated by tuberculosis as it occurs in the American Negro. The tuberculin index is higher than in the white American, the death rate about three times as high and the peak of the age incidence is at an earlier age. Furthermore, the shift of this peak to-

ward older age groups, while pronounced in the white, is negligible in the Negro.

Many Negroes show the same chronic localizing type of disease as the whites, but relatively acute forms, generalizations in the form of lymphatic and hematogenous spread occur with much greater frequency in Negroes than in whites. This was demonstrated by the author in a previous study and in order to confirm these findings, he calculated the ratio of deaths from all forms of tuberculosis to deaths from disseminated tuberculosis, separately for the two races. The figures derived from the United States mortality statistics show that the relative frequency of disseminated forms is considerably higher in Negroes and that the decrease of disseminated forms during the last 17 years is much smaller in Negroes than in whites.

Several studies of tuberculosis among Negroes and whites under identical or similar living conditions, show that while the morbidity rates are closely similar, the mortality rate for the Negro is about four times higher than for the white. One writer concluded that the chances for colored children (in Baltimore) to become infected in a tuberculous family are about equal to those of white children under similar circumstances, but the chances of dying from tuberculosis are three times greater in Negro than in white children.

Lack of space prohibits quotation of the author's discussion based on his observations but the following points stand out:

In the early phases of tuberculosis the disease is acute, rapidly fatal, generalized, without tendency to heal, with toxemic symptoms overshadowing local symptoms and has a predilection for the young.

No nation or tribe free of tuberculosis has a uniformly high suscpetibility to tuberculosis. The complete lack of resistance in so-called virgin soil is a myth. The individual degree of resistance and the collective frequency of the disease are not simply matters of interplay between host and bacillus but they are profoundly influenced by living conditions in the widest sense of the word.

The most spectacular decrease in tuberculosis mortality occurred, as a rule, before any organized campaign against tuberculosis could be initiated. However, anti-tuberculosis work is undoubtedly effective in later phases of the epidemic.

The South African report makes it clear that previous infection did, in no noticeable way, modify or alter tuberculous disease that developed later. A primary infection in a not highly resistant stock produces allergy without causing immunity.

There is no shred of evidence to show that immunization is transmitted by heredity. The elimination of the least resistant strains must undoubtedly play an important rôle in the gradual attenuation of tuberculosis, particularly so in the early phases of the epidemic.

Tuberculosis mortality parallels the socio-economic conditions, so much so that it would seem that poverty and unusual stress and strain should be the guide posts for case-finding programs.

The danger that an acute and virulent epidemic may sweep again through our population sometime after tuberculosis has been eliminated (or reduced to its minimum) because the immunizing effects of infection would then be lost, would appear slight. A population that has survived a tuberculosis epidemic and has rid itself of it is hardly comparable to a "virgin-soil" population.

Epidemiological Trends of Tuberculosis by Max Pinner, M.D., American Review of Tuberculosis, Vol. XLII, Sept., 1940.

Diabetes Insipidus Control

A means of controlling diabetes insipidus whereby the treatment is required less frequently is reported in *The Journal of the American Medical Association* for October 5 by James A. Greene, M. D., and L. E. January, M. D., Iowa City.

Diabetes insipidus is a condition involving the passing of large amounts of normal urine. It causes intense thirst constantly, day and night, and is said to be the result of disease of the pituitary gland following infection or injury to the brain. It should not be confused with the more widely known diabetes mellitus, a disease of the pancreas or human sweetbread, characterized by the passage of large amounts of urine containing sugar. This is the disease which is controlled by insulin.

The two Iowa City men report that an injection beneath the skin of pitressin tannate suspended in oil controlled diabetes insipidus in three patients for from thirty to eighty-two hours. They point out that it has been known for several years that a solution of the posterior pituitary controls the manifestations of this disease.

President's Page

The West Virginia State Medical Association has never actively engaged in politics. We have occasionally displayed more than a passing interest in the legislative candidacy of one or more of our own members, but we have never actively supported any particular person or party. In keeping with this policy, the WEST VIRGINIA MEDICAL JOURNAL has never accepted or published political advertising, even though considerable revenue could be derived from that source.

Within the next week the American people will again march to the polls to select their governmental officials. A great number will vote party against party. In many communities, and perhaps in the nation, the hundreds of thousands of independent thinkers and independent voters will decide the election. We are proud to believe that the medical profession harbors more independent thinkers than any other profession or group. The influence of the medical profession should be felt next Tuesday.

In casting their ballots next Tuesday, we hope the doctors of West Virginia will keep the interests of their own profession well in mind. Ballots should be studied carefully in advance, particularly in the legislative field. Physicians votes should be cast for those candidates regardless of party, who are recognized as honest and intelligent men. If we can have a legislature with a reasonable number of fair-minded gentlemen, then the medical profession should have nothing to fear.

When the election is over, we hope the various county medical societies will show an interest in the men whom they are sending to the state legislature. A little goodwill contact work back home, such as luncheon conferences or inviting the successful candidates to one of your dinner meetings, will be a great help to the Association's legislative committee when these men reach Charleston.

We have one more request. Approximately 40 per cent of the doctors of this state have not filled out and returned their medical preparedness questionnaires. We have reason to believe that most of these are non-members of the Association. However, there are still some of you who have not complied. We do not know how serious things are going to get, but the safest way for a doctor to be where he belongs, and to avoid any possible embarrassment, is to fill out his medical preparedness questionnaire and send it in at once. Extra copies may be obtained from the Association headquarters office in Charleston.

Frank V. Langfitt
President.

West Virginia Medical Journal

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POLIOMYELITIS

Infantile paralysis (anterior poliomyelitis) is indeed a dreaded illness. It has been definitely established as a communicable disease caused by a filterable virus. However, according to the United States Department of Health, it has been seldom possible to attribute the occurrence of a given case to an exposure with a previous case. Likewise the incidence of the malady in more than one child of a family is infrequent. Most authorities, who have studied its epidemiology, are convinced that the disease is transmitted by healthy carriers both among adults and non-susceptible children. Therefore, devoted parents run far greater risks in kissing their children than they do by sending them to school.

It seems unfortunate that misguided public opinion demands delay in the opening of schools, creating a false sense of security and followed by a host of inconsistencies. The majority of cases in the 1940 epidemic in West Virginia occurred in children under school age. Besides, the epidemic was well under way before the time set for school to open and has followed the usual incidence curve throughout September with its more abrupt drop in October. This has been quite uniform in epidemics where schools were open or where they were closed. The evidence that closing or delaying the opening of school has lowered the incidence of poliomyelitis is indeed meager. Health departments, who otherwise do a vast amount of valuable but unpublicized work, in this instance have sadly accentuated rather than abated the fears of the panic-stricken public. When there is so much of proven value which could be published, why select a procedure of such questionable merit?

The virus of infantile paralysis apparently thrives best in warm weather and becomes more potent by the end of the summer; in turn it quickly subsides after onset of cooler weather. It occurs in rural sections where children have not associated with other children outside their own family as often, if not more often, proportionately than it does in crowded tenement districts. It occurs in the children of the very well-to-do classes, whose parents use utmost care, as often as among the poor and neglected waifs. This has led many careful analysts of the problem to feel that in the late summer and fall, the virus is extremely widespread and that no doubt everyone is exposed. Fortunately only a few are susceptible to the illness in such a form that serious consequences follow. Some believe that moderate exposure to the virus produces an immunity and that a child too carefully isolated is later under greater danger from an unavoidable exposure.

We physicians, who thoughtlessly mention the possibility of infantile paralysis — when examining a patient with merely suspicious symptoms during an epidemic, are certainly guilty of adding to the mental anguish of parents already overly conscious of this feared malady. This is indeed a dramatic utterance (or at least productive of drama), and should not pass the lips of a competent doctor until the suspicion has led to verification. One, with reasonable diplomacy, can secure sufficient care and isolation of a suspected case until a diagnosis can be made.

Let us try not to be guilty in our own actions or in our advice to the laity, of straining a gnat and swallowing a camel!

1941 MEETING DATES

The dates for the seventy-third annual meeting of the West Virginia State Medical Association in Charleston have just been selected and announced by the Committee on Scientific Work, in cooperation with the Kanawha Medical Society. The 1941 session will be held on Monday, Tuesday and Wednesday, May 12, 13 and 14, with headquarters at the Daniel Boone Hotel. The scientific sessions and the technical and scientific exhibits will be held at the Shrine Mosque, directly across the street from the hotel.

Work on the convention program for the 1941 meeting was started by the Scientific Committee at a meeting in Charleston on October 31. Tentative out-of-state speakers for the general and section programs were selected at that time. All of the scientific sections and special societies were represented at the October 31 meeting.

While no definite announcement regarding the program will be made for some time, it is known that the 1941 meeting will follow the same general outline that has been carried out for the past several years. The Scientific Committee is composed of Dr. R. J. Wilkinson, Huntington, chairman; Dr. Howard T. Phillips, Wheeling, and Dr. P. A. Tuckwiller, Charleston.

SYPHILIS AND CONSCRIPTION

Of interest to every physician, and particularly to those engaged in public health activities, is the suggestion of Surgeon General Thomas Parran that Wassermann tests be provided for the 16,000,000 men between the ages of 21 and 35 who have registered under the selective service act. Dr. Parran made his suggestion at the Conference on Medical Preparedness held at the American Medical Association headquarters in Chicago on September 20, and pointed out that the male age group between 21 and 35 represents 70 per cent of the active syphilis of the nation.

According to Dr. Parran's figures, if routine Wassermann tests of the entire 16,000,000 men are made, some 900,000 cases of syphilis might be expected to be found, and of this number, approximately 300,000 would be infectious. Dr. Parran felt that the greatest difficulty in carrying out his proposed program would be the lack of physicians capable of supplying 143,000 registration offices with men capable of taking blood, and the volume of serologic tests which would be necessary. Specifically he proposed that the collection and examination of specimens be accomplished as follows:

1. A team of one or more doctors and nurses to be provided at each registration point and to be responsible for the collection of the specimens. Local and state health departments should be able to obtain the services of the physician and provide the nurse in cooperation with the local and state medical societies without cost to the selective draft board.

2. The blood specimens with the identification blank properly filled out to be sent to the nearest public health laboratory where serologic tests for syphilis are performed. Such laboratories should be notified, if possible, ten days to two weeks in advance of the approximate dates of registration in order that the volume of routine serologic work could be set at a minimum during the registration.

3. The men whose blood specimens proved to be negative should be notified directly regarding the laboratory findings. The men who have positive or doubtful serologic tests should be directed by mail to report to the physician or clinic named on the original identification slip which was forwarded from the collection point to the state laboratory. The positive or doubtful report should be sent to the man's physician or clinic in order that the proper physical examination could be performed to supplement evidence ob-

tained through serologic examination of the blood and necessary to confirm the diagnosis of syphilis.

4. Individuals found to be infected with syphilis may according to circumstances arrange for treatment either from their own physicians or from public clinics, of which there are approximately 2,500 at various places throughout the United States.

Dr. Parran's plan has already secured the approval of the subcommittee on Venereal Diseases of the National Research Council. However, there are many who feel that the selective service act, being new, and with its own examination and registration, should not be complicated with public health activities. No one would question the tremendous value of gaining access to 70 per cent of the nation's active syphilis, but one might be justified in questioning the method involved. At the Conference on Medical Preparedness it was pointed out that many influential newspapers were opposed to conscription, and that complications confusing to the public would give such newspapers and other agencies an opportunity to condemn the entire conscription act.

A compromise was worked out which we hope will bring interesting and important results. While blanket endorsement of Dr. Parran's proposal was withheld, it was generally agreed that a comprehensive serological program should be conducted for the 400,000 men who will be accepted and inducted into military service.

A. M. A. TRIAL OPENS

At this time *The Journal* is compelled to inform its readers that the work of the American Medical Association as a body, including its contribution in aid of the national defense, must suffer serious interference during the next two or three months. The secretary and general manager of the American Medical Association, the editor of its publications, the secretary of its Council on Medical Education and Hospitals and the director of its Bureau of Medical Economics must be absent from the headquarters office during those months since they are required to attend, as defendants, their trial in the United States District Court for the District of Columbia on the indictment there returned against them and against the American Medical Association, the Medical Society of the District of Columbia, the Washington Academy of Surgery, the Harris County (Texas) Medical Society, and fifteen prominent physicians in Washington, D. C. The indictment charges all defendants with having conspired to violate Section 3 of the Sherman Anti-Trust Act. The Association respectfully asks the indulgence of the medical profession and the public throughout the United States for any deficiencies which may result from this unavoidable and unfortunate condition.

When the American Medical Association was requested to assist in the national emergency now confronting this country, its House of Delegates voted unanimously and without dissent to give wholehearted cooperation and support. The officers, the headquarters office, the Committee on Medical Preparedness, the state chairmen and numerous other physicians have been and are now engaged intensively in that service, and they expect to continue therein. In advising physicians and the public of this apparent discouragement in the essential work that it has undertaken to perform, the Association desires to say that it will do its utmost to overcome all obstacles to medical preparedness. We assure the medical profession that it will never be said either in criticism or in comment, that the Association failed its country in any hour of need no matter what obstacle might arise to interfere with the otherwise expeditious and efficient service that this country deserves in this critical hour.

The Journal has indicated repeatedly the difficulties associated with medical mobilization and the nature of the work now being carried on to provide all the various arms of the government with physicians. Even though this work will be seriously hampered

by absence from the headquarters office of some of the key men who have been charged with this duty, every possible method will be utilized to carry on the work as expeditiously as can be done. Plans are also being developed for the handling of correspondence, finance, personnel and all the other multitudinous affairs associated with the work of this great organization to the best extent of which the organization is capable, so that the medical world and the public may not suffer by this serious interference with the provision of medical service and the dissemination of knowledge of medical advancement.—*Journal of the American Medical Association.*

WARNING BEARS FRUIT

In the October issue of the JOURNAL we warned our members against one S. S. Strauss, an imposter who was posing as a physician and who was receiving a lot of "relief" work from the industrial physicians in West Virginia. Strauss claimed to hold a West Virginia license and said he was a graduate of the Long Island College of Medicine, both of which claims were false. The JOURNAL requested that the Association headquarters at Charleston be notified if Strauss was located.

Within 48 hours after the October issue was mailed out, the Association headquarters at Charleston was notified by Dr. T. L. Woodford that "Doctor" Strauss was helping him out at Junior in Barbour county. Dr. Guy Michael, secretary of the Barbour-Randolph-Tucker County Medical Society and, incidentally, mayor of Belington, was notified and accepted the case. He called in consultation Dr. Hu C. Myers, president of the society, and the sheriff of Barbour county. They called on "Doctor" Strauss the same evening.

In reporting the incident, Dr. Myers said that Strauss first insisted he was a doctor and that his license was at his rooming house in Bluefield. After some questioning he was shown the article in the October JOURNAL. After reading it carefully, he confessed that he was not a physician.

Strauss' story was that he attended the New York City College of Medicine for three terms, practiced during the summer in Kentucky, served a federal penitentiary sentence for using the mails to defraud and finally came to West Virginia to do "relief" work. He told Dr. Michael and Dr. Myers, in the presence of the Barbour county sheriff, that if they would withhold charges, he would leave the state and never come back. Charges were withheld and Strauss departed.

We are inclined to believe that Strauss has left West Virginia and will not return. If he does show up again, the going will not be so lenient next time. We are pleased that the JOURNAL was instrumental in locating Strauss so quickly and we commend Dr. Woodford and the Barbour county doctors for their prompt action. If they will bring their sheriff to our next convention, we will give him a guest badge.

Fatal Virus Disease

The possibility that Western equine encephalomyelitis, a highly fatal virus disease similar to so-called "sleeping sickness" which has been considered resistant to treatment after the onset of symptoms, may be effectively treated with serum is indicated in the results of investigations with mice and guinea pigs, reported by Joseph Zichis, Ph.D., and Howard J. Shaughnessy, Ph.D., Chicago, in *The Journal of the American Medical Association* for September 28.

They point out that there is a general impression that the treatment of a disease in which the causative agent is a virus is of no value after the incubation period of the virus has passed and the infection has become established. Their studies on laboratory animals, however, reveal that Western equine encephalomyelitis can be treated with rabbit serum with practically complete success in mice 48 hours after the virus has been injected and in guinea pigs after the appearance of the first sign (fever) of the disease. When the infection has progressed further and there are visible signs of the disease, about two-thirds of the animals can be saved.

General News

Doctors At Work

"Doctors at Work" is the title of the sixth annual series of dramatized radio programs to be presented by the American Medical Association and the National Broadcasting Company.

The series will open Wednesday, November 13, 1940, and run for thirty consecutive weeks, closing with a broadcast from the A. M. A. meeting at Cleveland, on June 3, 1941. The program is scheduled for 10:30 p. m., eastern standard time, over the Blue network, other NBC stations and Canadian stations.

The programs will dramatize what modern medicine offers the individual in the way of opportunities for better health and the more successful treatment of disease. Incidental to this main theme, the programs will explain the characteristics of the different fields of modern medicine and its specialties.

"Doctors at Work", will be broadcast from scripts by Wm. J. Murphy, NBC script writer and author of many previous AMA-NBC "shows" and other popular radio features. It will be produced under the direction of J. Clinton Stanley, director of "Medicine in the News", last season's successful AMA-NBC health program. Supervision will be by the AMA Bureau of Health Education, directed by W. W. Bauer, M. D.

Descriptive posters for local distribution may be had gratis from the Bureau of Health Education, American Medical Association, 535 N. Dearborn St., Chicago. Program titles will be announced weekly in *The Journal of the AMA* and monthly in *Hygeia, the Health Magazine.*

Vitamin-Free Foods

A recent announcement by the Research Laboratories of the S. M. A. Corporation reveals that they are now in a position to provide vitamin-free casein and other vitamin-free foods for experimental purposes to researchers who have previously been obliged to manufacture these items for private use.

For many years the S.M.A. Corporation has been producing these foods exclusively for use in their laboratories. Now, with the expansion of their own facilities and the realization of the convenience to others engaged in laboratory work this offer is made to provide vitamin-free diets at an exceptionally reasonable cost. Quantities of one, five, ten or 100 pounds or more may be ordered directly from the Research Laboratories, S.M.A. Corporation, Chagrin Falls, Ohio.

Medical Reserve Called

Up to and including October 20, a total of seven West Virginia medical reserve officers had been called to the colors. Additional West Virginia physicians, who belong to the United States Army Reserve, will be called regularly throughout the period of the emergency. Those who are now in army service are:

Dr. Floyd R. Ayers, Beckley; Dr. John W. Barnhart, Charleston; Dr. S. S. Bobes, Wheeling; Dr. H. A. Conrad, Elkins; Dr. D. N. Pickar, Wheeling; Dr. Roydice Staats, Cairo; Dr. Jerome H. Toupkin, Point Pleasant.

In addition to the above, Dr. L. Rush Lambert of Fairmont, major in the Reserve, was placed on active duty in Charleston in September and will serve for at least one year.

Dr. A. Spates Brady, Jr., Charleston, is on duty at the Norfolk Navy Yard where he was assigned on October 15. Dr. Brady is a lieutenant in the United States Naval Reserve.

Southern Medical Meeting

The annual session of the Southern Medical Association, second largest organized medical group in the world, will be held in Louisville, Kentucky, on November 12-15, 1940. There will be nineteen sectional meetings, 10 general clinical sessions and three independent medical societies meeting conjointly with the Southern. The Brown and Southern hotels will be headquarters for the meeting.

All members of state and county medical societies in the south have been invited to attend the Louisville session. A large number of West Virginia physicians are expected to attend and many county meetings in the state have been postponed so as not to conflict with the Southern meeting.

Industrial Physicians to Meet

Industrial physicians and manufacturers from all over the country will attend the American Conference on Industrial Health to be held Thursday, November 14, at the Towers Club in Chicago. The conference will be sponsored by the American

Association of Industrial Physicians and Surgeons, a 25-year-old organization.

This first meeting of the American Conference on Industrial Health has for its purpose the correlation of viewpoints of all persons who are interested in promoting industrial health. These include the employer, physician, industrial hygienist, labor, psychiatrist, insurance companies, public relations men, safety experts, and the legal profession.

Dr. Clarence O. Sappington of Chicago, well-known consulting industrial hygienist, and co-chairman of the committee with Dr. Edward C. Holmblad, stated: "We have invited the manufacturer and other persons to attend and participate in the convention so that we may prove the practical value and application of industrial health work, and so that they may realize how much time and money may be saved yearly by such measures."

Among the prominent speakers who will talk at the convention sessions are: Dr. Morris Fishbein, editor of the *American Medical Association Journal*; Mr. B. C. Heacock, president of the Caterpillar Tractor Company of Peoria; Dr. Volney S. Cheney, medical director of Armour and Company, and J. M. Conway, representing the National Association of Manufacturers, New York.

The conference, which is scheduled to begin at 9:30 a. m., will conclude with a dinner session at which Dr. Fishbein and Mr. Conway will speak.

Dangers of Aspirin

More attention should be given to the poisonous effects of aspirin and oil of wintergreen, *The Journal of the American Medical Association* for October 5 declares in an editorial which discusses the ill effects of these two commonly used products and points to the comparatively high death rate of aspirin recently reported from England.

"The only country in the world that permitted a patent for acetylsalicylic acid (aspirin) was the United States," the editorial says. "The 'Bayer' patent expired in 1917; since then the supply of acetylsalicylic acid or aspirin on the American market has been essentially of the same quality, irrespective of the manufacturer. Even after the expiration of the patent in 1917 it has paid the Bayer Company to continue the proprietary advantages gained thereby, and the concern has extolled, through advertisements and the radio, the virtues of acetylsalicylic acid for the self treatment of many disorders.

County Society News

Cabell County

The regular monthly meeting of the Cabell County Medical Society was held at the Hotel Pritchard, Huntington, on October 10 with a good attendance. The guest speaker was Dr. Archer A. Wilson, Charleston, neurologist, who gave a highly interesting talk on "Some Observations on Diagnosis and Treatment of Trauma to the Head and Nervous System."

At this meeting new officers for the year 1941 were elected. Dr. George Lyon was elected president to succeed Dr. William F. Beckner, Dr. Chauncey Wright was elected vice president, Dr. Cole Genge, secretary, and Dr. Frank Barker was reelected treasurer.

JAY L. HUTCHINSON, *Secretary*.

Central West Virginia

The quarterly meeting of the Central West Virginia Medical Society was held at the First M. E. church at Tennerton near Buckhannon on the evening of October 17 with a good turnout. The program was presented by Dr. H. R. Sauder, Wheeling, internist, who talked on "Cardiac Irregularities." This was a most practical paper which brought out a great many questions.

A. B. BOWYER, *Secretary*.

Fayette County

Dr. Guy W. Leadbetter of Washington, D. C., was the guest speaker of the Fayette County Medical Society at the regular monthly meeting, October 15, in Conley Hall, Montgomery. Dr. Leadbetter's subject was "Low Traumatic Back Pain."

Dr. Wray J. Tomlinson, Montgomery, and Dr. Donald L. Butterfield, Milburn, were accepted to membership in the society. Dr. Norman G. Angstadt, Fayetteville, was recently transferred to membership in the society from Wetzel county. Dr. James B. Thompson has recently located in the county at Scarbro.

G. A. DANIEL, *Secretary*.

Kanawha County

The Kanawha Medical Society held its regular monthly meeting on October 8 at the Daniel Boone Hotel, Charleston. There was a good attendance.

The guest speaker of the evening was Dr. J. Mason Hundley, Jr., Professor of Gynecology of the University of Maryland, Baltimore, who gave an interesting and practical paper on "The Diagnosis and Modern Treatment of Carcinoma of the Cervix." A special dinner was served prior to the meeting, at which Dr. Hundley was the guest of honor.

Due to the meeting of the Southern Medical Association in Louisville starting November 12, the next meeting will be held early with Dr. Julian Benjamin and Dr. Harry Landt of Cincinnati and Dr. William Dressler of New York as the speakers. This will be a symposium on cardiology with the West Virginia Heart Association and the Heart Council of Greater Cincinnati.

W. A. THORNHILL, JR., *Secretary*.

Lewis County

Dr. H. H. Haynes of Clarksburg was the guest speaker at the first fall meeting of the Lewis County Medical Society which was held at the Weston State Hospital with Dr. J. E. Offner as host. Dr. Haynes gave a very instructive and interesting talk on "Skeletal Fixation of Fractures." A very small number attended.

After the interesting discussion by Dr. Haynes, Dr. Offner served sandwiches and coffee to the doctors present. It would have been well worth the while of the Lewis county doctors to have attended this meeting to obtain the benefit of this very fine program. The undersigned will be most grateful to any secretary who can give him any ideas or methods by which to increase attendance at our county meetings.

E. A. TRINKLE, *Secretary*.

Logan County

The Logan County Medical Society and the Logan County Dental Society had their annual joint meeting and dinner at the Aracoma Hotel on Thursday evening, October 10 at six p. m.

Dr. E. C. Hume of Louisville was the speaker of the evening. His subject was "Diagnosis and Treatment of Fractures of the Bones of the Face."

Our next regular meeting will be held on November 6 instead of November 13 due to conflict of dates with the Southern Medical meeting.

J. W. CARNEY, *Secretary*.

Mercer County

The regular monthly meeting of the Mercer County Medical Society was held in the West Virginian Hotel, Bluefield, at 8:00 p. m., September 19, 1940, with an excellent attendance. A telegram from Wendell L. Willkie in which he opposes socialized medicine was read to the society and discussed at great length. Drs. A. H. Hoge, R. O. Rogers and Frank J. Holroyd were appointed on the legislative committee. Correspondence received from the National Physicians' Committee was read and discussed.

Dr. John S. Pierson of Bluefield was admitted to membership in the society.

Dr. Frank V. Langfitt of Clarksburg, president of the West Virginia State Medical Society, spoke to the society. Dr. Langfitt compared the medical situation in the United States with that of the European countries, pointing out the marked advantages of our system of practice over the socialized system of Europe and the marked disadvantages of socialized medicine both to the patient and to the doctor. He advocated that the members of the medical profession acquaint the public and the lawmakers with the facts in the case, stating that doctors had been too modest while their enemies had been advertising.

Dr. Langfitt also pointed out the excellent work of the various state committees, especially the Committee on Education which has been sponsoring postgraduate work throughout the state. He warned the doctors that they had been used by the pharmaceutical houses to exploit new drugs which the pharmaceutical houses sold for big profits. He cautioned that it is only through united efforts that the doctors are going to be strong and to be able to accomplish what they set out to do. Dr. Langfitt's paper was discussed by Drs. Harry Steele and Charlie Hare.

A buffet luncheon was served after the meeting.

FRANK J. HOLROYD, *Secretary*.

Monongalia County

The regular monthly meeting of the Monongalia County Medical Society was held at the Hotel Morgan, Morgantown, on the evening of October first. Dinner was served at six o'clock, after which the scientific program was presented by Dr. Vernon L. Peterson of Charleston. Dr. Peterson gave a very fine paper on "The Value of the X-ray to the General Practitioner."

CARL E. JOHNSON, *Secretary*.

Ohio County

The first meeting of the Ohio County Society was held September 27, at which time Dr. Harry Goldblatt of Cleveland gave a very clear and stimulating talk on the subject "Experimental Hypertension." Attention to the smallest details, painstaking care, thoroughness in his work are all characteristics of the research man.

At the business session preceding the scientific program Dr. John McCurdy was admitted to membership, transferring from Brooke County Society.

The schedule of October meetings this month included Grover C. Weil, M. D., of Pittsburgh, Pa., on October 18, and Lieut. A. R. Behnke, U. S. N., on October 25.

On November 8, Dr. George Crile, Jr., of Cleveland, will discuss the subject "The Diagnosis and Treatment of Surgical Lesions of the Stomach."

HAROLD G. LITTLE, *Secretary.*

News Items

Dr. Fred R. Whittlesey, formerly of the West Virginia University School of Medicine, at Morgantown, member of the JOURNAL Publication Committee, and aid in putting on the scientific exhibit at this summer's White Sulphur Springs meeting, has gone to Omaha, where he will be connected with the University of Nebraska School of Medicine.

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Dr. John S. Pierson of Bluefield is a new member of the Mercer County Medical Society.

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Dr. E. T. Cecil of Berwind has moved away, according to a postoffice notation, and left no address.

* * * *

Dr. B. J. Read and Dr. Edwin C. Lane have left Red Jacket, Mingo County.

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Dr. A. T. Repass, formerly of Clarksburg, is in Roanoke, Virginia, preparing for medical service in the United States Navy.

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Dr. A. Spates Brady, Jr., has entered medical service in the United States Navy and recently went to Elkins on a short leave before being sent to his new station, which will be either Richmond or Porto Rico.

Dr. Vaughn Link of Shepherdstown and Dr. D. J. Shaw of Berkeley Springs are new members of the Eastern Panhandle Society.

Dr. Peter G. Kroll, after a year's absence in Ohio, has returned to Welch and the McDowell County Society. Dr. James A. Campbell of Coalwood is a new member of the McDowell society also.

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Dr. E. Norval Carter of Huntington is a new member of the Cabell County Society.

Dr. L. J. Moore of Huntington has moved to Bancroft, W. Va.

Kanawha Medical Society reported five new members this month: Drs. A. W. DeBell, Malden; W. L. Hardesty, Charleston; C. L. Houck, Carbon; C. A. Harper, Clendenin, and H. D. Nester, Mammoth.

Dr. I. O. Wilson moved from Pine Grove to 1803 Goff Ave., Clarksburg.

Logan county reported Drs. Dewitt T. Bond of Amherstdale; E. M. Bond, Amherstdale; L. W. Lawson of Logan, and George D. Vaughan of Holden as recent new members.

Inexpensive Muslin Splint

A simple, inexpensive muscular ankle restraining splint made of muslin that can be used not only for infantile paralysis cases but also as an improved safeguard in the transportation of wounded soldiers, is described in *The Journal of the American Medical Association* for September 28 by Max Kaplan, M. D., S. O. Levinson, M. D., and Philip Lewin, M. D., Chicago.

"In addition to its simplicity," the three men say, "it is inexpensive, can be made universally available and can be used repeatedly. The indication for its use is as a temporary substitute for the generally used plaster and metal splints for the extremities."

They point out that in mild cases of infantile paralysis in which there is no or only a slight paralysis of the muscles of the extremities the splint may be used throughout the acute and subacute stages of the disease.

It consists of 6 by 36 inch strips of unbleached muslin at the ends of which are tapes to be fastened to the mattress or bed posts. About nine inches from each end shorter strips of muslin are attached. These strips loop around the patient's wrist, ankle, foot or thigh.

TWENTY-FIVE YEARS AGO

The November 1915 issue of the JOURNAL contained original articles by Drs. A. P. Butt, S. D. Hatfield, R. U. Drinkard, C. E. Grimm, and T. K. Oates, of West Virginia.

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From an editorial: "In December, 1875, the late Dr. James E. Reeves began the publication of a monthly medical journal under the name of the *West Virginia Medical Student*. This is believed to be the first effort at medical journalism ever made in West Virginia. His publication continued but for twelve months, making a volume of 404 pages. ***

A writer for the *Medical Student* calls attention to the fact that on page 18 of the Transactions of the Medical Society of the State of West Virginia for 1875, is the following resolution: "*Resolved*, That Dr. R. P. Davis, Dr. Robert W. Hazlett, Dr. George Baird and Dr. M. S. Hall be appointed a committee to present the accompanying plan of a bill to establish a State Board of Health to the Legislature at its next session, and to employ all proper means to secure the passage of the bill." This is believed to be the first move that was ever made in the direction of passing a law in this State establishing a State Board of Health. * * * The first effort proved a dismal failure, however, and simply because one or more men failed to appreciate the importance of moving vigorously toward the desired end. All such movements must have a leader, and in this case the leader was wanting. * * * It was not until six years later that our State Board of Health law was enacted. The chief credit for this successful move is due to Dr. James E. Reeves. * * * Dr. Reeves, with the assistance of Judge James H. Ferguson, drafted the bill which was passed on March 8, 1881, creating a State Board of Health. Governor Jackson appointed the following gentlemen to membership on the Board: Dr. Reeves of Wheeling, Dr. George B. Moffatt of Parkersburg, Dr. C. T. Richardson of Charles Town, Dr. George H. Carpenter of Moorefield, Dr. A. R. Barbee of Point Pleasant, and Dr. Isaiah Bee of Princeton. * * * The Board met at the Capitol Building at Wheeling on June 21, 1881 and elected Dr Moffatt president and Dr. Reeves secretary.

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Suggestions From an Old Doctor

A few things it would be well for medical colleges to teach:

That your first patients probably owe every other doctor in town.

That you cannot get married on what you have outstanding.

That every one is not going to drop his family physician to employ you.

That one glass of liquor smells as strong as ten.

That your standing in the community will be gauged by the company which you keep.

That the wealthy are, as a rule, slower pay than the poor.

That those who make the longest prayers are those who let you wait the longest for the amount of your bill, and those who contribute the most to foreign missions are apt to neglect the home physicians.

* * * *

Society Proceedings: Harrison County

At the October 28 meeting of the Harrison County Medical Society, held at St. Mary's Hospital, Clarksburg, Dr. H. E. Sloan gave an extemporaneous talk on "Acute Pyelitis." Dr. H. H. Haynes was called out before he could report a case of aestivo-autumnal malaria treated with quinine hydrobromide intravenously.

S. L. Cherry, Secretary.

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Dr. J. F. Williams and Dr. H. V. Varner have returned from a seven weeks' trip through the west.

Dr. Robert Linn Osborn, Clarksburg, was married to Miss Myrtle Smith, Clarksburg, on September 23, 1915.

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Advertisers in the JOURNAL twenty-five years ago, and who are still JOURNAL advertisers are: Sawyer Sanitarium, Marion, Ohio; John Wyeth, The Cincinnati Sanitarium, Cincinnati Biological Laboratories, Mt. Regis Sanitarium, Salem, Virginia; Parke Davis and Company, Detroit.

Coverslips in Labs

A new material, plastacele, has proved satisfactory as a substitute for the small glass coverslips used for microscopic laboratory work, the supply of which has been threatened by the European war, Jack C. Norris, M.D., Atlanta, Ga., reports in *The Journal of the American Medical Association* for September 28.

The new plastacele coverslips, which are perfectly transparent, are slightly less expensive than the imported ones were at prewar prices.

Obituaries

Doctor Rolla Camden

Dr. Rolla Camden, widely known Wood county physician, died on August 22 at his home in Parkersburg from chronic nephritis. He was 68 years of age. Dr. Camden was born at Weston and received his academic education at Phillips Academy, Andover, Massachusetts, and the Virginia Military Institute. Later he attended Jefferson Medical College, Philadelphia, graduating in 1897. He went immediately to Alaska during the gold rush that year but returned after a short time and began the practice of medicine.

After practicing two years in Washington, D. C., Dr. Camden returned to West Virginia and located at Parkersburg. In later years he took postgraduate work in New York and Philadelphia and specialized in gastroenterology and proctology. Upon his retirement from active practice in 1938, he was elected to honorary membership in the State Association. He served at one time as secretary of the Parkersburg Academy of Medicine.

Doctor Thomas R. Hoge

Dr. Thomas R. Hoge, prominent Wheeling eye, ear, nose and throat specialist, died on August 23 following an extended illness. He was 45 years of age and had been in active practice in Ohio county for the past 15 years.

Dr. Hoge was born in Wheeling in 1895 and received his academic education at Washington and Jefferson, graduating with a Bachelor of Arts degree. He then served 22 months in France. After the war he entered Jefferson Medical College, graduating in 1923. This was followed by interneship and residency in the University of Pennsylvania Hospital, Philadelphia.

Dr. Hoge was a member of Phi Kappa Psi social fraternity and Alpha Kappa Kappa medical fraternity. He also belonged to the Masonic orders.

Doctor Clermont E. Park

Dr. Clermont E. Park, 69 years of age, died on October 10, 1940. He had practiced in Parkersburg for 35 years and was one of the best known physicians in Wood county. He was in general practice from 1905 until the World War, after which he limited his practice to eye, ear, nose and throat work. Dr. Park served as a hospital steward during the Spanish-American War and as a first lieutenant in the Medical Reserve Corps during the World War.

The deceased was born in Buffalo, West Virginia, on July 12, 1871, and received his medical education at the College of Physicians and Surgeons, Baltimore. After an interneship at Mercy Hospital, Baltimore, he received his West Virginia license in 1905. Dr. Park took an active interest in public affairs as well as in his chosen profession. He was a member of the Masonic orders and served as a member of the West Virginia State Democratic Executive Committee.

Doctor Mary B. Monroe

Dr. Mary A. Baron Monroe, retired Wheeling physician, died in June following a long illness. She was 83 years of age. Dr. Monroe graduated from the Eclectic Medical College, Cincinnati, in 1889 and was licensed to practice in West Virginia the same year. She retired from active practice several years ago because of ill health.

Usefulness of Cobra Venom

The Council on Pharmacy and Chemistry of the American Medical Association considers purified cobra venom to be of some value for the relief of pain, especially that of inoperable cancer, it announces in a preliminary report in the October 5 issue of *The Journal* of the Association in which it points out that it is awaiting further evidence concerning the usefulness and harmlessness of the substance.

Use of the venom in the early stages of cancer, the Council warns, would tend to delay curative measures. Regarding statements that it lacks the chief disadvantages of morphine, the Council says: "It does not displace morphine completely in more than relatively few cases but it is of value in these few."

The Council points out that "The technique of dosage is not simple and the optimum dose must be determined separately for every patient. It does not act uniformly as to degree and time in cases presenting approximately similar involvement. The dose is independent of age, well being and other factors. Without careful supervision it would seem that the venom may do far more harm than good in many cases."

BOOK REVIEWS

Chemicals In War

"Chemicals in War", a treatise on chemical warfare by Augustin M. Prentiss, Ph.D., Lieutenant Colonel, Chemical Warfare Service, United States Army, with chapters on the protection of civil populations and international situation by George J. B. Fisher, Major, Chemical Warfare Service, United States Army. First edition. McGraw-Hill Book Company, Inc., New York, 1937.

There are occasional books or treatises which rise to such heights that they become the accepted authority in a particular field. Such a one is this excellent treatise on chemical warfare. There are 739 pages including the index. The bibliography is most exhaustive. There are 49 references listed as referred to in the text. There are in addition 25 pages of reference gleaned from the literature of 16 different languages. Every writing of significance prior to 1937 has been included in the bibliography. From this remarkably thorough study of the literature and with his own extensive experience as a leveling force, the author has built up this remarkably fine text.

So comprehensive and complete is it that it does not lend itself well to detailed review. In the preface, the author states that the purposes of this book are threefold: (1) to trace the development of the art and science of chemical warfare from its beginning in the World War to the present time; (2) to present an American viewpoint on chemical warfare; and (3) to make available to the public an authentic text on a much misrepresented and misunderstood subject of importance to our future national security. In the accomplishment of this mission, he has been eminently successful.

The text is divided into five parts: (I) "Fundamental Considerations" which deals with such information as basic principles of chemical agents, technical and tactical requirements of such agents, their dissemination and the organization for chemical combat; (II) "Chemical Agents" in which the various classifications are presented and discussed, and then in the following order the special groups studied, lacrimatory agents, lung injurant agents, systemic toxic agents, vesicant agents, respiratory irritant agents, smoke agents, and incendiary agents; (III) "Technique and Tactics of Chemical Warfare", with a discussion of general chemical tactics and then chemical technique and tactics of the infantry, of the cavalry and of the chemical troops, artillery and air corps; (IV) "Defense Against Chemical Attack", with a discussion of individual protection, collective protection, tactical protection and the protection of the civil population, and (V) "General Considerations", with a discussion of the relation of chemical industry to chemical warfare and the international situation as regards gas restrictions, etc.

Each topic is treated with a detail which is effective without being too long. The style is attractive and invites reading. The arrangement of the material is effective.

In the concluding chapter, there is a brief summary. The following extract merits quotation: "The casualty records of the late war and the united opinion of the medical profession and foremost toxicologists have shown conclusively that chemicals are not only more human than other weapons, but that chemical combat is the one form of organized force that can be regulated to bring about the subjection of an opponent with a minimum of violence and injury. This is exemplified in the now widespread use of chemicals in quelling civil disturbances."

The chapter on "Protection of the Civil Population", by Major Fisher is in keeping with the high character of the rest of the text. Major Fisher is regarded as a leading authority in this field by his professional colleagues.

The American public is indebted to Colonel Prentiss for giving to it such a timely, well written, authentic text on chemicals in war. We were greatly in need of such a book, and are fortunate to have such an up-to-date one at the present moment when dark clouds are gathering so ominously.

—G. M. L.

The Injured Back

"The Injured Back and Its Treatment", edited by John D. Ellis, M. D., Charles C. Thomas, publisher, Springfield, Illinois. The editor of this book, Doctor Ellis, wrote the chapters on routine examination of the injured back, relation of trauma to certain inflammatory degenerative diseases and anomalies of the spine, and the treatment of minor injuries. He apparently has had an extensive experience with back injuries and has much that is useful to say about them.

Sir Arthur Keith contributed a concise account of man's posture and its evolution. Dr. Nathan S.

Davis, III, is author of the chapter on backache as a symptom of visceral disease. The chapter on management of recent compression fractures of the vertebral bodies without cord injury is very well done by Dr. H. Earle Conwell of Birmingham, Ala., whose wide experience in traumatic surgery is well known.

Dr. Loyal Davis and Dr. Hale A. Haven of Northwestern University describe the neurosurgical aspects of back injuries in an able manner and Dr. Ralph K. Ghormley of the Mayo Clinic contributes an account of the so-called facet syndrome as a cause of back pain. Dr. Robert Osgood of Boston writes of the etiologic and prognostic significance of faulty body mechanics and back injuries.

This book is simply and clearly written and is well illustrated by line drawings, photographs and reproductions of x-rays. It should prove valuable to any physician treating back injuries.

—H. A. S.

Medical Induction Boards

"After registrants are accepted by local draft boards they will be sent for physical examination to medical induction boards," *The Journal of the American Medical Association* for October 5 explains in an announcement asking for volunteers for army medical induction boards. "About one hundred such boards will be set up throughout the country, about half of them near army posts and stations. Each board will consist of three internists, one general surgeon, one orthopedic surgeon, two ophthalmologists, one otorhinolaryngologist, one neuropsychiatrist, one clinical pathologist and one dentist.

"As has been explained by Colonel Albert G. Love (United States Army Medical Corps), the specialists to be assigned to such service will probably include civilian specialists as well as reserve officers, who will be on temporary duty. Civilian physicians will be on a per diem basis and will be used as long as their services are required. It has been proposed that they be paid at the base pay of major with allowances for travel and subsistence while on duty. Physicians preferred for this service are those who, on account either of age or of physical infirmities or because of reasons affecting their civil life, cannot go into military camp. It has been tentatively estimated that the time required for this service might approximate twenty to thirty days in the period between October 16 and February 1."

Woman's Auxiliary

Public Relations

The three learned professions are theology, law and medicine. Profession is defined as "that of which one professes knowledge of." The practice of medicine is a profession which has for its first objective—service to humanity—and, the person who chooses this as his life work assumes an obligation to conduct himself in accord with the ideals of that profession. Robert Louis Stevenson wrote of the physician, "He is the flower of our civilization, and when that state of man is done with, only to be marveled at in history, he will be thought to have shared little in the defects of the period and to have most notably exhibited the virtues of the race. Generosity he has, such as is possible only to those who practice an art, and never to those who drive a trade; discretion tested by a hundred secrets; tact, tried in a thousand embarrassments, and what are more important, herculean cheerfulness and courage."

Do we realize that our husbands are these men? How many of us glowingly answered "Yes" when asked whether we felt that we would make a good wife for a doctor? We as their wife must share their life, and have proportionate responsibilities. Can we honestly say we are following through? We have not had the long years of training that go to make a physician, which is all the more reason for us to declare a constant state of training for ourselves. There is so much more to be desired than the so-called "womanly instinct" in the perfect doctor's wife! She must have a deep and sincere understanding of the ideals of his profession, the tenets of American medicine, and very nearly the same degree of generosity, tact and discretion described as belonging to a true physician.

We must acquire all this before we can hope to be our husbands "Auxiliary", and we are just that —"a conferring aid-help-or assistant". Our profession by principle and tradition, is committed to the prime objective—service it can render to humanity. As Auxiliaries it is our problem to interpret those ideals to the public, and that is best done as individuals. We must be able, by virtue of our training, to discern when and where to give impetus to a thought in the right direction, or give a correct interpretation to some distorted conception relative

to medical practice. This information must be offered in the cool temper-poised, and definitely informed manner becoming a physician's wife. We must avoid creating ill will through thoughtless speech or action.

The Woman's Auxiliary was organized primarily for the social value within the profession itself. This objective was quickly achieved, acknowledged, and the mere meeting together failed to create satisfaction, so projects were born. It is obvious that projects entered into by a group of doctor's wives would be related to the state of health and its allied problems. Then, the education of the members of the Auxiliaries in reference to the attitude of the parent organization, to health standards, specific community problems, and certainly direction as to conduct, became the first necessity. Only after these adjustments were in order were we to go out into the highways and by-ways and offer our services as educated emissaries of the profession.

And so, we come to that activity in the Woman's Auxiliary known as "public relations." Public relations—that state of activity meant to create good will and better understanding, begins at home! We are constantly being confronted with new problems, new ideas, and our willingness and ability to accept these everchanging forces, measures our fitness as educated good will carriers of the medical profession. If we have our house in order, are alert to our opportunities and willing to make sacrifices of our time when the need arises, then we have become a true "Auxiliary" to our husband, and to all doctors!

The passage of years has brought us a well formed group to which it is an honor to belong. It is our individual responsibility to keep that group above criticism, and to remember that knowledge without sense is double folly! While our husbands are working untiringly at guarding the community health, we must continue to guard our position as wives of American doctors, and strive to further establish good will between that profession and the public. A little more cooperation, a little more frankness, and a lot more of good will will go far in achieving those ideals which the long years of training have brought. And, if we have done our job well, there will be a deep satisfaction in that we have very nearly become "the perfect Doctor's wife"!

CLARE DEAN JOHNSON HELMICK,
Public Relations Chairman, 1940.

Lewis County

The Woman's Auxiliary to the Lewis County Medical Society held their September meeting on the thirteenth, with a luncheon served at "Tally-ho." Mrs. C. R. Davisson, president, presided and fourteen members attended. As this was the first meeting of the Fall season, the president read from the revised constitution and by-laws. Mrs. Holcombe's inaugural address was read and the new Auxiliary handbook was discussed. The year's program was brought up and the Auxiliary hopes to have the National Auxiliary President Mrs. V. E. Holcombe, as a guest during November.

Mrs. H. M. Andrew and Mrs. Ralph M. Fisher were appointed to attend the executive board meeting in Charleston.

MRS. RALPH M. FISHER, *Secretary*.

Logan County

The Woman's Auxiliary to the Logan County Medical Society held their first meeting of the year on October 1, at the Logan Woman's Club. Mrs. V. A. Deason, president, called the meeting to order. Fifteen members were present.

There was a discussion of the program for the coming year, the Jane Todd Crawford fund, and sewing for the Red Cross. Next month the meeting will be held at the home of Mrs. E. H. Starcher at Earling on November 5. Mrs. H. V. Thomas, president of the Auxiliary to the State Medical Association, will be the speaker.

MRS. J. W. CARNEY, *Secretary*.

Marion County

The Woman's Auxiliary to the Marion County Medical Society met on September 24, at the Fairmont Hotel, Fairmont, for their first Fall meeting. Mrs. C. L. Parks, president, called the meeting to order. Mrs. W. A. Welton, program chairman, outlined the year's programs and several matters of routine business were discussed. There was an attendance of sixteen members at this meeting. October 29 is the date of the next meeting.

MRS. J. W. DAVIS, *Secretary*.

Parkersburg

The Woman's Auxiliary to the Academy of Medicine of Parkersburg, held a luncheon meeting at the Chancellor Hotel, Parkersburg, October 9, 1940. Mrs. H. A. Giltner, president, called the meeting to order. Thirty members were present.

Mrs. George Evans, state legislative chairman from Clarksburg, gave a very interesting paper on "Socialized Medicine." In addition Mrs. Harry Thomas, State Auxiliary president, spoke on "Organization of Local, State and National Auxiliary," pointing out the great importance of cooperation.

MRS. CHARLES L. GOODHAND, *Secretary.*

Executive Board Meeting

The executive board of the Woman's Auxiliary to the State Medical Association held their annual Fall meeting at the Charleston Woman's Club, Charleston, on Tuesday, October 8. Following the meeting the members of the board were luncheon guests of the Kanawha County Auxiliary. Guests of honor and speakers were: Mrs. V. E. Holcombe, Charleston, president of the Auxiliary to the American Medical Association; Mrs. Prentiss Willson, Washington, D. C., member of the national executive board; Mrs. M. I. Mendeloff, Charleston, national corresponding secretary, and Mrs. Harry V. Thomas of Clarksburg, state Auxiliary president. Mrs. Ray Kessel, Charleston, president of the Kanawha Auxiliary, presided at the luncheon and introduced the speakers.

There were 88 guests at the luncheon including many Kanawha Auxiliary members, Dr. Robert K. Buford, Charleston, president-elect of the State Association; Dr. W. A. McMillan of Charleston, Dr. Hu Myers, Philippi; Dr. Russel Kessel, Dr. E. B. Henson, Dr. H. M. Beddow, of Charleston, and Mr. Joe W. Savage, state secretary.

Mrs. Holcombe Honored

Honorary life membership in the Woman's Auxiliary to the West Virginia State Medical Association was conferred on Mrs. Helen Davis Holcombe by the executive board at its Charleston meeting on October 8, 1940. This honor was given in recognition of Mrs. Holcombe's services to the state and national Auxiliary. Mrs. Holcombe is president of the Woman's Auxiliary to the American Medical Association and immediate past president of the State Auxiliary.

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COMMUNICATIONS

Medical Ethics

In the October issue of the JOURNAL I wrote from my inexhaustible supply of ignorance in the form of a high fast one on how the delegates had responded to the handbook at our recent meeting in White Sulphur. At this time I feel the urge to throw a wide slow one directly at the soul of our organized—or disorganized—effort to serve the people. In order to properly propel this wide slow ball in the general direction of the plate it is necessary to ask all those who still feel that we exist for the public rather than the public existing for us to review here and now our time honored Oath of Hippocrates:

"I swear by Apollo the physician and Aesculapius and Hygeia and Panacea and all the gods and goddesses that according to my ability and judgment I will keep this oath and this stipulation—to reckon him who taught me this art equally dear to me as my parents, to share my substance with him and relieve his necessities if required, to look upon his offspring in the same footing as my own brothers, and to teach them this art if they shall wish to learn it, without fee or stipulation and that by precept, lecture, and every other mode of instruction, I will impart a knowledge of the art to my own sons, and those of my teachers and to disciples bound by a stipulation and oath according to the law of medicine, but to none others.

"I will follow that system of regimen which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous.

"I will give no deadly medicine to anyone if asked, nor suggest any such counsel, and in like manner I will not give to a woman a destructive pessary. With purity and holiness I will pass my life and practice my art.

"I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work.

"Into whatever houses I enter I will go into them for the benefit of the sick and will abstain from lasciviousness with women and males of freemen and slaves.

"Whatever in connection with my professional practice or not in connection with it I see or hear in the life of men which ought not to be spoken of abroad I will not divulge as reckoning that all such

should be kept secret. While I continue to keep this oath unviolated may it be granted me to enjoy life and the practice of the art, respected by all men in all times. But should I trespass and violate this oath may the reverse be my lot."

It is in order for us to read once in a while the oath we swore to uphold and to ask ourselves the question: are we keeping the faith as Hippocrates must have had to be the author of such a masterpiece given to us to follow. We hear much about ethics in our county, state and national meetings. Do we take all such discussions for our personal good or do we assume they are meant for the other fellow? Do we "follow that system of regimen which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous?" I interpret this to mean that I am honor bound to know full well my limitations and capabilities and so refrain from undertaking any procedure which I know will not benefit my patient to the same extent as would result from the hands of a fellow practitioner whom I know to be better qualified in that particular procedure. To my mind our ethics are meant to apply to the public as their protection against those in our ranks who constantly elect to benefit themselves rather than their patients. Is such action ever honestly good ethics?

Reading further in our oath are the following timely lines: "I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work." Here Hippocrates shows clearly his own limitations and so invites us to follow in his wake. The "stone" is not limited to the ureter, the kidney or the gall-bladder but exists in the tonsil, the appendix and the uterus. Is this not clearly demonstrated in many of the court dramas in which our noble surgeons are called upon to play an important rôle. Is it good ethics for the patient? Are we defending the right person in all such incidents?

Reading further we are asked to dwell on these lines: "While I continue to keep this oath unviolated may it be granted to me to enjoy life and the practice of the art, respected by all men in all times."

Are we respected by all men today when a large segment of the population is clamoring for social or governmental medicine? Are we respected by all men when we fail to accept the fact that a ten

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dollar fee to many people is larger than a hundred dollar fee to many others? Are we respected by all men when we do not lend our aid to projects, in communities where needed, to provide adequate hospital facilities at the price the patient can pay? What service is to be had, or good to the people, from thousands of hospital beds in any community if the service charge for occupancy is beyond the means of many of the people in the community?

We have all read and heard many discussions pertaining to the group in our various state associations, such as the committee of four hundred physicians headed by one honorable Doctor Hugh Cabot. Many in this organization are among our best teachers and practitioners. It would seem to me that such a large number of prominent physicians would not hazard their good standing in organized medicine if our ethics functioned for the patient rather than for ourselves.

We all know how some of our hospitals in sections of West Virginia are at present engaged in the business of hospital listing of various groups of workers in laundries, filling stations, department stores, etc., in our smaller towns. All such plans deprive those workers of a free choice of physician as well as to make it impossible for private physicians in all such communities to earn an honest living. Is this good ethics for either the people or the members of our own organized medicine? I assert that it is not. Are we all for one and one for all?

Much food and thunder lies herein.

—ANDREW E. AMICK.

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Sulfanilamide is a simple and highly effective treatment for cerebrospinal meningitis (inflammation of the membranes enveloping the spinal cord and brain). Kalei K. Gregory, M. D., Edward J. West, M. D., and Raymond E. Stevens, M. D., Providence, R. I., state in *The Journal of the American Medical Association* for September 28. They report a death rate of only 17.2 per cent in patients so treated as compared with 45.1 per cent in patients given antimeningococcus serum and 42.4 per cent in patients treated with meningococcus antitoxin.

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Neighbor Journals

Dr. Hugh Cabot

The general pillorying of physicians in the public press which has been conducted with increasing acerbity in the last ten years by various persons pretending an interest in the little man reaches its most disgusting levels when it comes from within our ranks. Dr. Hugh Cabot, recently of the Mayo Clinic, aired his opinions on prepaid group practice (with the assistance of a special writer) in the April, 1940, issue of *The American Magazine* under the pungent title, "Give the Patient a Break." So prominent is the name of Cabot in American history, so exciting is the title of the article, so utopian is the promise of his wishful thinking that the article is condensed in the September issue of *The Reader's Digest.* Since this publication reaches a multitude of casual readers the remarks as presented in it are the basis for this criticism.

Dr. Cabot opens with a reference to the big fees he made in his private practice thirty years ago. He infers that that sort of thing is all wrong now. The clinic is the thing. He has been in a clinic—one which was assisted in making itself great by charging large fees to those who could pay them. Prior to this clinical service he was attached to a state institution which provided graded-cost service. A practical idealist with a well-to-do background, with a desire to renounce big fees, and with an evangelistic fervor for prepayment clinics could have found many places in the nation where such an institution could have been started among people of deserving means. The "organized medicine" Dr. Cabot belittles does not deny him this privilege. If he could show that such a place could operate efficiently without such destructive appeals to prejudice and ignorance as that article entitled "Give the Patient a Break" he would have many imitators.

Doctor Cabot's lack of experience in general practice doubtless makes it hard for him to appreciate the abilities of the general practitioner and his lack of frequent need for specialists to assist him in the care of his patients. The distinguished doctor

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pulls an old rabbit out of the files when he discusses failures in diagnosis because of a lack of laboratory machinery in the hands of the general practitioner. The diagnosis of the case he quotes would be obvious to a senior medical student—the student is no specialist and is trained to observe and think before he consulst a laboratory. In making much of the costs for laboratory work, much of which is made necessary by laziness or hurry, Doctor Cabot makes a typical specialist's error.

His next breach of good-thinking and of ordinary manners is in discussing would-be specialists. He infers that anyone may label himself a specialist and thus passes entirely over the work of the American boards and other well constituted groups which have set up standards for the measurement of a specialist. He hauls out the dirty wash for many years back and assails fee-splitting as a sin of private practice. He ignores the fact that a desire to make money by improper means also affects some men in clinics. Should he now attach himself to the sort of a clinic he espouses he will appear to have taken an underhanded method to establish a financial advantage for himself.

Doctor Hugh Cabot has done the profession which reflected his glory an unmannerly, loose-thinking disservice in allowing such an interview to be circulated in print.—*Illinois Medical Journal.*

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Contaminated Food

"Foods were a more prolific source of disease outbreaks in 1938 than were milk or water supplies," according to a report on "Disease Outbreaks Resulting from Faulty Environmental Sanitation" by Senior Sanitary Engineer Leslie C. Frank of the United States Public Health Service.

The food-borne disease most frequently involved during 1938 was gastroenteritis with 23 reported outbreaks and 1,015 cases. The diseases next most frequently involved were "food poisoning" and typhoid fever, with 19 outbreaks, 817 cases, and three deaths, and 16 outbreaks, 251 cases, and 16 deaths, respectively.

The greatest number of water-borne outbreaks and deaths occurred in connection with untreated ground water supplies. This means that one of the important problems still remaining in connection with the prevention of water-borne outbreaks is a more intensive sanitary control of ground water supplies. Many ground water supplies are faulty either in design or operation.

Our control of surface water supplies is inadequate. During 1938 there were reported a total of eight outbreaks in connection with surface water supplies, four of which were treated water supplies.

Defective water supplies caused more outbreaks of gastroenteritis than of either typhoid fever or dysentery. It was found that unsafe water supplies caused as many typhoid fever outbreaks as did unsafe milk supplies.

Sweet milk supplies were responsible for 38 of the 42 milk-borne outbreaks, one was traced to buttermilk, two to ice cream and one to cheese. In only one of the 38 outbreaks traced to sweet milk was any attempt made to pasteurize the milk. In this case the pasteurizer was reported to have "broken down."

Only a small percentage of water and milk-borne outbreaks occurred in communities of over 10,000 population. Thirty-eight of the 70 food-borne outbreaks (54 per cent) occurred in communities of 10,000 and over, which embraced 47.2

(Continued on page xxviii)

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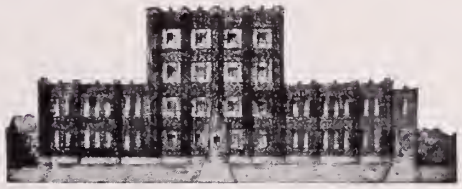

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(Continued from page xxvi)

per cent of the total population. Large communities are more advanced than small communities with respect to water and milk sanitation.—*Journal of the Medical Association of Georgia.*

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3. The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.

4. The development of a mechanism for meeting the needs of expansion of preventive medical services with local determination of needs and local control of administration.

5. The extension of medical care for the indigent and the medically indigent with local determination of needs and local control of administration.

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8. Expansion of public health and medical services consistent with the American system of democracy.—*Indiana Medical Journal.*

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(Continued on page xxx)

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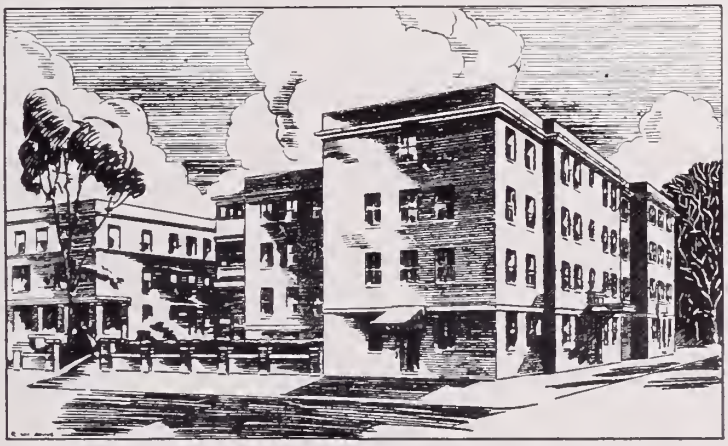

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(Continued from page xxviii)

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Vol. XXXVI December, 1940 No. 12

THE TREATMENT OF PERNICIOUS VOMITING OF PREGNANCY*

By FREDERICK C. IRVING, M. D.**
Boston, Massachusetts

THIS report concerns the treatment of hyperemesis gravidarum in 225 consecutive cases from the public wards of the Boston Lying-In Hospital. Patients beyond the twentieth week of gestation were excluded because excessive vomiting later in pregnancy is often a symptom of pre-eclampsia rather than of hyperemesis gravidarum. This series embraces no mild cases as we do not admit them to the hospital. In 122 instances, or 54.2 per cent, the vomiting had lasted over a month, and 152 cases, or 67.4 per cent, were referred by outside physicians or other hospitals after unsuccessful attempts at treatment. The purpose of this paper is to call attention to certain improvements in treatment which, in the past six years, have enabled us to reduce our incidence of therapeutic abortion from 17.3 per cent to 2.6 per cent, and our mortality from 5.5 per cent to zero. Before explaining, however, how these results have been achieved, it may be advantageous to review some of the facts regarding the etiology, pathology, symptomatology, and diagnosis which a study of this size has revealed, as well as to deal briefly, in its proper place, with some current theories concerning why some women in early pregnancy vomit so much.

THE AUTHOR

Dr. Irving, graduate Harvard Medical; William Lambert Richardson Professor of Obstetrics, Harvard Medical School; Fellow American Gynecological Society; Diplomate American Board of Obstetrics and Gynecology.

INCIDENCE

From January 1, 1928 to January 1, 1940, a period of twelve years, women with 39,724 pregnancies were admitted to the hospital or treated in the out-patient department, and of these 225, or one in 176, entered because of pernicious vomiting. It is striking, however, that only 73, or one in 544, were patients that had registered for care in our clinic, and that the remainder, sent in as emergency cases, had been in the hands of private phy-

*Read before the joint meeting of the West Virginia State Medical Association and the Medical Society of Virginia at White Sulphur Springs on July 31, 1940.

**From the Department of Obstetrics of Harvard Medical School and the Boston Lying-In Hospital, Boston, Massachusetts.

sicians, and hence came from a higher economic stratum. This fact has an apparent bearing upon the frequency of hyperemesis gravidarum. All of our registered patients are in restricted financial circumstances. No patients may register for care at our hospital, which is a semi-charitable institution, unless the family income is below a small set figure. Many of them are poor and the families of many are on relief. Moreover, our registered patients are almost without exception hard-working, sensible women who are so occupied with the demands of housekeeping that they will submit to no illness unless it incapacitates them.

Contrary to the usual opinion that pernicious vomiting occurs more frequently in primigravidæ, we found that 61.3 per cent of our patients had been pregnant before. This proportion agrees with our usual ratio of multigravidæ, which is about 60.0 per cent of the total. Of the 138 multigravidæ affected, 70, or 50.7 per cent, had vomited excessively in one or more previous pregnancies, and 10 of them had been sufficiently sick to require therapeutic abortion once, two

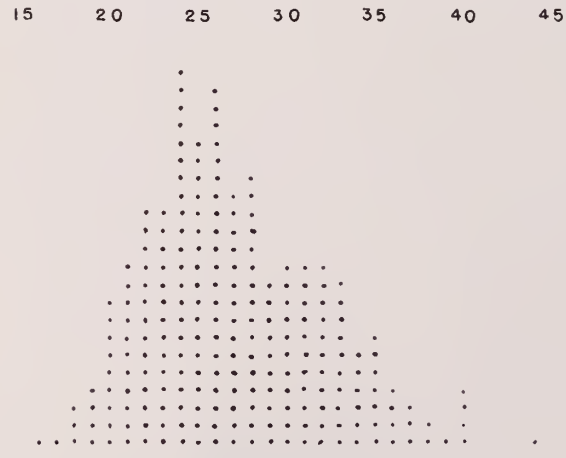

Fig. 1: Age.

twice, and one five times. Age had no bearing upon the incidence of the condition as most cases occurred during the years of greatest fecundity, (Fig. 1).

The period of gestation at which each was admitted, (Fig. 2), indicates that the greatest number entered between the sixth and twelfth weeks. One of our patients had a twin pregnancy and one triplets.

There have been many attempts to link pernicious vomiting to pre-eclampsia. In opposition to this point of view I wish to remind you that not only do these diseases occur at different periods of pregnancy, but that the

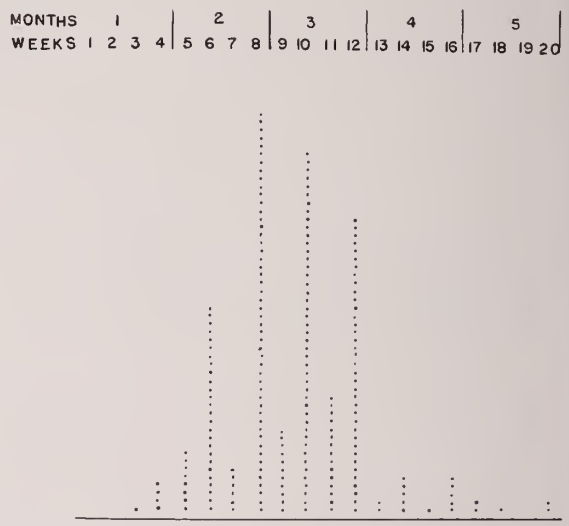

Fig. 2: Period of gestation at hospital admission.

general signs and symptoms of each in no way resemble each other; nor when they die, do their organs show the same changes. Moreover, our patients with pernicious vomiting showed later in pregnancy no more tendency to develop pre-eclampsia than did the others in the clinic; the ratio in their case was 1:22.5, and the general ratio 1:21.

PATHOLOGY

Stone[1] in 1903, Ewing[2] in 1905 and Williams[3] in 1906 described what they believed to be characteristic lesions of the liver in women who had died of pernicious vomiting. There was necrosis of the central portions of the lobules without involvement of the periphery. Since this picture also occurs in acute yellow atrophy of the liver, it is reasonable to suppose that these patients may have died of that condition rather than from pernicious vomiting. This description, first given wide circulation by Williams as distinctive of hyperemesis gravidarum, has been, and still is, being copied in some later text-books, with no attempt made by their authors to corro-

borate or to disprove it, either by their own investigations or by the perusal of the more recent literature. For the past 30 years, however, all pathological reports have shown the hepatic change to be the same fatty degeneration that follows extreme starvation. We obtained autopsies in five of our six patients that died and in each case found fatty degeneration of the liver; in no instance did we see the necrotic changes reported by the earlier writers. The conditions in the kidneys were less uniform. Damage to the convoluted tubules, shown by cloudy swelling or fatty degeneration was found four times. In one case there was swelling of the glomeruli, accompanied by ischemia and hyaline thrombosis, as is present in eclampsia. One case had chronic pyelitis. In all five instances the suprarenal glands were normal.

PATHOGENESIS

In 1769, Robert Johnson,[4] who wrote learnedly upon the subject, attributed the "reachings, loathings and vomitings" with which pregnant women are afflicted, to various causes, but chiefly to retention of the menses which, collecting in the body, caused engorgement of the vessels of the stomach. In the 170 years that have elapsed since then the minds of medical men have not been idle, for with the passage of time and the increase in knowledge, their ideas, though less fantastic, have been no less fertile. Those prodigies of medicine, the sex hormones, have inspired the speculative to new and greater heights of supposition. What could be more alluring than to assume that in the vomiting of pregnancy there must be some derangement of the internal secretions which control the reproductive function?

As long ago as 1916, J. C. Hirst[5] advanced the theory that since the nausea and vomiting of pregnancy occurred when the corpus luteum was growing, an insufficient secretion of progesterone might be its cause. He gave an extract of this structure by intramuscular and intravenous injections and was satisfied with the results, although those who repeated his work found no such beneficial effect. Until 1937, when Venning and Browne[6] isolated sodium pregnandiol glucoronamide, the excretion product of progesterone, there was no accurate method known whereby one could assay the amount of this hormone that left the body in the urine; nor to my knowledge, although it offers a promising field for investigation, has there been any publication to indicate whether its quantity in pernicious vomiting is decreased, increased, or unchanged. If deficient progesterone secretion produces pernicious vomiting and if it also, as some believe, causes abortion, one would expect these conditions to go hand in hand. On the contrary, only six of our 225 cases miscarried; a frequency of only one in 37.5 cases, as contrasted with the usual expectancy in pregnancy of one in every five or six.

An interesting sidelight on the corpus luteum in the belief of Finch[7] that women may vomit in early pregnancy because they are allergic to their own corpora lutea. He skin-tested women with hyperemesis and obtained positive reactions with commercial preparation of progesterone; negative reactions were obtained in patients who did not vomit. He also secured, in time, relief in certain cases where he produced desensitization. So far no corroboratory reports have appeared. It should be remembered also from the purely scientific point of view that modern commercial preparations of progesterone are synthetic, and that none of them is made from the human corpus luteum.

Based upon the supposition that estrin is secreted in small quantities in early pregnancy and then increases gradually to term, when enormous amounts are put out, Hawkinson[7] has suggested that pernicious vomiting may be caused by a deficiency of this hormone. He gave estrin to his patients, also with good success. He presents, however, no evidence to prove that less estrin than normal is secreted in pernicious vomiting. Moreover, recent work by Marrian, Cohen and Watson[9] and by others has shown that estradiol, the active principle of estrin, is broken down in the body into two substances, estriol, and

estrone, which is the more potent. Both exist in two forms: the so-called "free" form, and a form conjugated with glycuronic acid. Up to eight and a half months the "free" forms of both substances constitute only about one per cent of the total; after that they increase rapidly and may be the most important factor in bringing on labor. The usual animal assay methods, which do not reveal the presence of the conjugated estrogens, give values, therefore, that are actually far below the real amounts.

Little attention in this connection has been paid to the gonadotropic substance of pregnancy, which is secreted by the chorion in large quantities in the first month of pregnancy and gradually falls as gestation proceeds. It is the presence of this substance, of course, upon which the Aschheim-Zondek test depends. About the only writer who has used gonadotropic substance therapeutically is Fischer[10] who reported prompt relief after giving his patients, without their knowledge, retention enemata of their own urine. One wonders if the results would have been equally good if he had told them what he was doing.

SUPRARENAL GLANDS

Not only have the sex hormones been theoretically implicated in pernicious vomiting, but at least two other endocrines as well. Thirty-one years ago Rebaudi[11] suggested that the suprarenal glands might be at fault, and in 1932, Kemp[12] expressed the opinion that these organs normally hypertrophy in pregnancy and may not do so in pernicious vomiting. In 1937, Freeman and Melick[13] reported 47 cases treated with cortical extract, accompanied, as one might expect, again by a favorable outcome. In the same year Sussman[14] reported good results in ambulatory patients after administering calcium and parathyroid extract. When, as we have just seen, we have five different groups of observers curing pernicious vomiting with five different hormones, it is not surprising if we wonder just where the truth lies. Most mild cases of hyperemesis are readily relieved by simple measures. There is scarcely a condition in medicine that requires so much assurance on the part of the doctor and so much faith on the part of the patient. On the other hand the woman whose illness has defied the efforts of one or more physicians, and who at last enters the hospital firmly convinced that she will not be well until she is aborted, presents a problem that cannot be solved by hormonal shots in the dark—at least not in our experience.

Women with excessive vomiting are starved in proteins, carbohydrates, fats, minerals and vitamins. The most serious vitamin deficiency that develops is that of B complex which in some instances results in a polyneuritis differing in no way from that found in beriberi. Bleeding, spongy gums, and other signs suggestive of scurvy, or vitamin C deficiency, such as hematuria and periostitis, may appear. Retinal hemorrhages also have been reported.

Harding and Watson,[15] Titus and Dodds[16] and others have maintained that glycogen depletion in the liver is closely associated with pernicious vomiting. Glycogen depletion of the liver is not susceptible to proof even at autopsy, because immediately after death this substance is immediately converted to glucose. However, there is a certain amount of clinical evidence that indicates hepatic impairment, since in almost 80 per cent of our cases in which the icteric index was determined it was found above the normal. Also, in some severe cases jaundice, and bile in the urine are noted. We know that depletion of the hepatic glycogen store is produced by starvation, hence this phenomenon is much more likely to be the result of vomiting than its cause. Finally, therefore, we are forced to admit that no present theory concerning the pathogenesis of pernicious vomiting has been established to our complete satisfaction. It is possible that when the question is finally settled its solution may come through the refinements in chemical analysis which are now for the first time being applied to the sex hormones.

SYMPTOMS

The vomiting of hyperemesis gravidarum may vary from the simple ejection of recently ingested food to a constant reflux of the gastric contents. After the stomach has been emptied of food the patient vomits first clear fluid, then bile-stained liquid of the characteristic thin pea soup character and eventually an admixture of new or old blood, the latter producing the so-called coffee ground vomitus. The entrance of someone into the room, the slamming of a door, the raising of a window shade may be all that is necessary to precipitate an attack. Unless the patient's condition is most serious the vomiting is diurnal and she is likely to sleep uninterruptedly at night. Because of starvation there is loss of weight, which is often marked and may be excessive. In advanced cases the skin is so loose that it may be picked up in folds. Dehydration results both from the inability of the individual to retain liquids and from the actual loss of fluid by vomiting. The skin is dry and rough, the tongue coated, the lips parched and cracked and may be covered with sordes. The face is anxious, the eyes sunken, the general picture is one of marked misery and deep prostration.

The pulse rate in hyperemesis gravidarum is of great clinical importance. In our cases the highest rate recorded on the bi-daily chart was 100 or over in 89.9 per cent and 110 or over in 55.1 per cent. Among the patients that died the highest rate on the bi-daily chart was 110 in one case, 116 in one, 120 in two, 140 in one and 170 in one. F. S. Newell, former chief of staff of the Boston Lying-In Hospital, taught that a sustained pulse rate of 110 or over always indicated a very sick patient, and further experience has justified this belief.

The urine specimens of all patients on admission, were examined for acetone, diacetic acid, albumin and sugar. The icteric index was determined in 60 cases, the non-protein nitrogen in 154, the urea nitrogen in 137, the uric acid in 138. The CO^2 combining power was investigated in 63 cases. No attempt was made to ascertain the fasting blood sugar level on admission, since we considered it of prime importance to begin treatment at once. Hence we are unable to agree or disagree with Titus and with Harding, who believe that a hypoglycemia exists, or with Peckham[17] and with Dieckmann and Crossen,[18] who deny the existence of any such phenomenon.

In Figure 3 are shown the results of our laboratory investigations. The presence of a

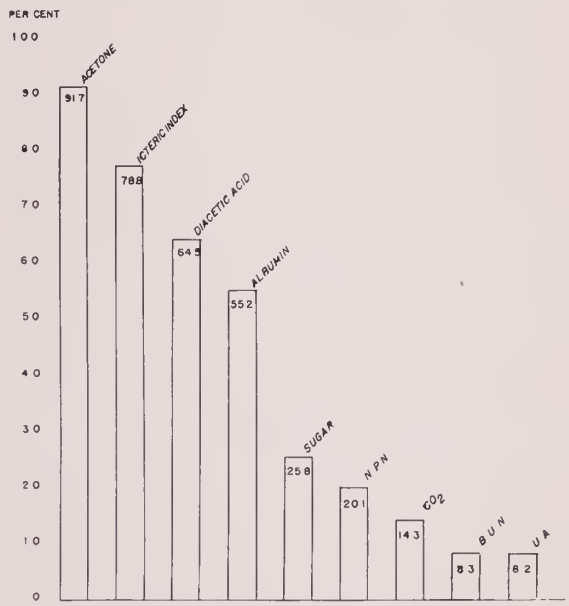

Fig. 3: Results of laboratory studies.

ketosis is almost the rule, which is not surprising, since most normal pregnant women will react in such a manner after a very short period of starvation. The presence of a high icteric index is significant and suggests involvement of the liver. In only a few cases was the CO^2 combining power below the normal for pregnancy, which shows that acidosis is not common in this condition. With the concentration of the blood that accompanies dehydration, an apparent increase in the non-protein nitrogenous constituents of the blood may be expected. Usually these values soon fall to normal after the patients receive sufficient fluid.

As regards the outcome we are concerned most with the maternal mortality and next with the necessity for therapeutic abortion.

Fitzgerald and Webster,[19] in a study of 396 cases, reported 15 deaths and 32 artificial terminations of pregnancy; incidences of 3.8 per cent and 8.1 per cent, and Naujoks,[20] in 82 cases, had two deaths, or 2.4 per cent, and 12 therapeutic abortions, or 14.7 per cent. The Report on Maternal Morbidity and Mortality in Scotland,[21] published in 1935, indicates that since 1911 about one in 30 of all deaths associated with pregnancy and childbirth were due to this cause.

PERIPHERAL NEURITIS

Peripheral neuritis, is of course, the most serious complication of pernicious vomiting. In our series it occurred four times, or once in every 56 cases of hyperemesis, and one of these patients died. The clinical history shows that in practically every case the vomiting has persisted for a long time. It then ceases, and the patient may begin to eat, but the pulse rate remains elevated. This is an important sign. Soon she begins to complain of muscular pains and weakness, usually beginning in the legs. The tendon reflexes are diminished or absent; wasting of the extremities, extensor paralyses, loss of sphincter control and nystagmus may follow. When peripheral neuritis occurs, the physician should always ask the patient if she has attempted to end her pregnancy by taking medicines, since some abortifacients containing apiol sometimes produce these symptoms by the presence of tri-ortho-cresyl phosphate. Immediate therapeutic abortion in peripheral neuritis often results in death; on the other hand if pregnancy is allowed to continue, even under massive vitamin B complex therapy, we have seen no marked improvement, and even prolonged invalidism. We believe that the ideal treatment is to terminate pregnancy if there is no improvement after about two weeks of intensive feeding, both by tube and by mouth, of a diet high in carbohydrate, protein and vitamins, fortified by large parenteral doses of thiamin chloride, ascorbic acid and liver extract.

Other chief complications in our series were puerperal psychosis, and pyelitis, both of which occurred four times. Pulmonary tuberculosis was found twice, and hydatidiform mole, renal tuberculosis, and acute appendicitis once each.

The mild cases of vomiting which do not require admission to the hospital need no special comment. Reassurance, a fat free diet rich in carbohydrates taken in small amounts six or seven times a day, with a mild sedative, such as sodium luminal in half grain doses administered two or three times daily will usually suffice. It is in this type of case that intramuscular injections of hormones evoke their most brilliant results; the physician may select what he believes to be the least illogical endocrine and give it to his patients, always provided he does it in a bold and convincing manner.

TREATMENT

Such simple measures, however, are not enough for the patient who has been given up by her doctor and who is seriously sick. She can be treated successfully only in a hospital under complete isolation from her friends and family, including her husband. She is put to bed in a quiet, darkened, single room without the services of a special nurse. No emesis basin is left by the bed. The lower bowel is emptied by enemata and from three to nine grains of pentobarbital, or any suitable barbiturate, are given by rectum and repeated often enough to maintain the patient in a somnolent condition. Opiates are avoided as they appear to increase the vomiting. An initial hypodermoclysis of 1,500 c.c. of normal saline is followed by sufficient daily amounts to help maintain the fluid balance. An intravenous drip of five or 10 per cent glucose is given at the rate of 30 to 40 drops a minute, and is repeated at intervals of from eight to 12 hours. In this way she receives 1,000 to 1,500 c.c. of glucose solution in a day, and the total parenteral fluid intake is raised to at least 3,000 c.c. in 24 hours.

This method of treatment so far differs in no way from that in use in most maternity clinics. From January 1, 1928 to January 1, 1934, we treated in this manner 110 cases.

Six patients, or 5.5 per cent died, and 19, or 17.3 per cent were subjected to therapeutic abortion. Considering the type of patient with which we had to deal the results were neither better nor worse than those reported from other hospitals. Since the pathological changes in the patients who died were those of starvation, Teel[22] of our clinic then suggested that we use the Levine nasal tube as a method of forced feeding until the patient was able to take nourishment freely by mouth. After we had made this addition to our treatment at the beginning of 1934, the improvement was at once apparent. Up to January 1, 1940, we have treated 115 cases in this way with no deaths and with only 3 therapeutic abortions, a frequency of 2.6 per cent. The severity of the disease did not vary in the two series; in the first group 53.9 per cent had vomited for over a month before admission and in the second series 54.6 had vomited for an equal period. The results have been striking, (Table 1). Under our present regime the patient is isolated and receives sedatives, hypodermoclysis of salt solution and intravenous infusions of glucose solution as already described. In addition the Levine tube is passed and feeding carried out according to the following routine (Table 2):

TABLE I—RESULTS

	1st Series, 1928-33 Parenteral Fluids, Sedatives	2nd Series, 1934-39 Levine Tube, Vitamin B, High Carbohydrates
Cases	110	115
Therapeutic Abortion	19 (17.3 P.C.)	3 (2.6 P.C.)
Died	6 (5.5 P.C.)	0
Successful Cases	85 (77.2 P.C.)	112 (97.4 P.C.)

Hours

0 Levine tube passed and stomach gently washed with a small amount of warm water.

½ Murphy drip started. Four to six oz. milk containing two heaping teaspoonful Harris' yeast concentrate.

1½ Four to six oz. orange juice sweetened with Karo corn syrup.

2½ Six oz. rich egg-nog made with cream and egg.

3½ Milk and Harris' yeast concentrate as above.

Repeat routine until 14 out of 25 hours are completed. Each feeding requires about 40 minutes and is given at body temperature.

While we prefer that the tube should enter the duodenum it is by no means essential and equally good results may be expected even when its end is in the stomach. At the same time thiamin chloride, ascorbic acid and liver extract are given intramuscularly.

In conclusion, a word should be said about the cases in which no treatment succeeds, for there will always be a few. If in spite of the measures described there is a steadily rising pulse which remains well above 110, or if there is intractable vomiting with jaundice the interruption of pregnancy is demanded. If 24 hours may be devoted to the process the safest procedure is to pack firmly the cervix and vagina, and the next day, after sufficient dilatation has been secured, to remove the ovum with the placenta forceps and the dull curet. Tearing or divulsion of the cervix must be avoided since the hemorrhage and shock resulting therefrom in a weakened patient may prove fatal. If time presses vaginal hysterotomy may be performed. As regards anesthesia, avertin, because of its effect upon the liver, is interdicted. It is well, if possible, to avoid inhalation anesthesia, particularly chloroform and ether, but if the obstetrician elects to use it nitrous oxide and oxygen, with preliminary medication with a barbiturate is reasonably safe. Sacral, or low spinal anesthesia, if skillfully given, are perhaps the best of all.

SUMMARY

1. This report covers 225 consecutive cases of pernicious vomiting.

2. In a large maternity clinic this complication occurs about once in 176 pregnancies.

3. It is relatively infrequent among women of a low economic status.

4. Spontaneous abortion rarely occurs.

5. The pathology is that of starvation.

6. Recent theories of pathogenesis are discussed, and none is found convincing.

7. Ketonuria is almost the rule and has no prognostic importance.

8. Acidosis is uncommon.
9. Subclinical icterus is frequent.
10. By supplying an adequate fluid intake and by combating starvation by the use of the nasal tube, which supplies a nutritious fluid diet, combined with large doses of the essential vitamins, the frequency of therapeutic abortion has been reduced from 17.3 per cent to 2.6 per cent and the death rate from 5.5 per cent to zero.

DISCUSSION

Dr. E. N. DuPuy, Beckley: We are taught that vomiting of pregnancy may be divided into three groups: Of the first, the neurotic type, too much cannot be said. I heartily agree with Dr. Irving that the personality of the physician in charge has more to do with the cures than the drugs or methods utilized.

The second, the reflex type, is recorded as being infrequent. But in my experience this is not a small group.

The third, the toxemic type, is the most severe. Here are found those cases arising from focal infections, deranged sugar metabolism, and the endocrinopathies.

The attributed etiological factors are myriad. We have had thrust at us protein antibodies, placental antigens, the corpus luteum, glycogen deficiency, hysteria, the endocrines, etc. It seems most logical to me, and it is my belief, that the gonadotropic substance secreted in excess during the early weeks of pregnancy is the causative factor.

The treatment of this condition seems to vary with the individual—both patient and physician. The patients resisting treatment should by all means be hospitalized. I agree with Dr. Irving in strict and absolute isolation. I pay particular attention to the findings of the ophthalmologist at his daily examination and when the first retinal hemorrhage occurs then I believe therapeutic abortion is demanded, within the hour. It is important to treat the patient psychically; to clear up any foci of infection; to treat any cervical erosion or retroversion of the uterus; to correct any anemia; to give adequate amounts of calcium, never forgetting its sedative action; to increase the intake of the various vitamins, with special reference to the vitamin B complex; to restore the chlorides of the blood stream; and, most important of all, to increase the fluids with the idea of diluting or flushing out the excessive amount of gonadotropic substance.

Dr. C. J. Andrews, Norfolk, Virginia: There can be no doubt that the nausea and vomiting of pregnancy is a very dangerous condition. We are grateful to Dr. Irving for bringing us the results of his studies and telling us something to do about it. His paper clearly indicates that we do not know the etiology of the nausea of pregnancy itself, or its mechanism. However, the picture which results from continuous vomiting is a fairly constant thing so far as symptomatology and pathology are concerned.

Dr. Irving's figures are almost revolutionary. He stated that in one group he had 17 per cent of therapeutic abortions and five per cent deaths, and his treatment reduced this figure to something like three per cent therapeutic abortions and no deaths. I do not believe we will be able to improve upon that.

Highly important in Dr. Irving's treatment is the use of vitamins in the control of nutritional deficiencies. While obstetricians, as a rule, are slow to take advice and to adopt new methods of technique, I believe the men in Virginia and West Virginia will use the suggestions which Dr. Irving has given us.

Some time ago we had occasion to study the follow-up on patients whom we had treated for sterility. These women want to be pregnant and it is interesting to note that they do not get nausea of pregnancy. No matter what may cause nausea of pregnancy, it certainly comes from the nervous system. The best time to treat the nausea of pregnancy is before the patient gets it. The doctor can best do this the first day a patient comes to his office.

In the treatment of nausea of pregnancy with bromide, one dose does almost no good; you have to give it until the level is up to a certain point. If you get the bromide level up to much over a hundred the patient will commence to have trouble. We usually start with 30 grains every six hours for two days, then twice a day and once a day, and give frequent meals containing high vitamin content. We make them eat six times a day whether they want it or not, and generally in a week they are all right. Once in a while when bromide does not work, we use a little phenobarbital. We have not seen a case of severe nausea in seven years. Our clinic patients are mostly negroes and they do not have nausea anyway. The method is so generally used that we rarely have a serious case.

Dr. Frederick C. Irving, closing the discussion: I think both Dr. DuPuy and Dr. Andrews brought up points that are extremely interesting. The psychic side of pernicious vomiting should not be ignored. Several years ago a colleague of mine called me to see a patient in one of the suburbs of Boston. "She's terrible. She just lies there in bed and vomits," he said. She was a very healthy, rosy-cheeked, Irish woman. The Irish make very good obstetrical patients; they are very sturdy and can stand almost anything. I examined her and said, "Mrs. O'Rourke, the trouble with you is that your womb is hanging too low. Attached to your womb are a lot of nerves. You know how after a storm telephone wires sag and how it interferes with communication, when you want to call up the grocer. That is the reason you are vomiting, the wires are out of commission and they telegraph bad news to your stomach. What I am going to do is to cure it." I produced a large, soft blown-up rubber pessary and I showed her that and said, "I'm going to put this inside and that is going to hold the womb up and that is going to take the strain off those nerves and you will be well." Two months later my colleague called me and said, "I wish you would come out to see that woman." I said, "Why didn't you tell me she wasn't any better." "Oh," he said, "she's fine. She hasn't vomited since you saw her, but I cannot get that thing out of her."

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Urine Tests For Intoxication

Unless special precautions are taken, serious errors may occasionally occur in diagnosing intoxication by estimating the amount of alcohol in the blood on the basis of that found in the urine, H. W. Haggard, M.D., L. A. Greenberg, Ph.D., R. P. Carroll and D. P. Miller, A.M., New Haven, Conn., warn in *The Journal of the American Medical Association* for November 16.

"As the urine test is now often carried out by or for the police," they say, "the concentration of alcohol in the urine may differ widely from that in the blood at the time the urine is obtained. Consequently this testimony may jeopardize the individual who is suspected of being intoxicated."

It is the concentration of alcohol in the blood which is the significant factor. "When determined directly from the blood," the authors explain, "this is the concentration which exists exactly at the time the test is made. But when the concentration in the blood is estimated indirectly from the urine, the figure obtained may be that for a concentration which existed at some indeterminable time previously." This is true because urine previously in the bladder may have been retained therein and excreted at the time of the test.

The authors cite studies on eleven persons illustrating the influence of the frequency of voiding on the concentration of alcohol in the urine. They found that when urine is collected for long periods of time the error is so great as to invalidate any estimates of the alcohol in the blood. It is true that urine does not ordinarily accumulate in the bladder for long enough periods to make the discrepancy so serious as in these studies, but there are occasional exceptions and it is with these that the authors are concerned.

To avoid the possibility of such errors, they suggest that the subject be asked to empty his bladder and this first specimen discarded. One-half hour later another specimen is taken, which is used in determining the concentration of alcohol in the blood.

PHRENICOEXERESIS*

By FRANK J. GERAGHTY, M. D. and THOMAS B. AYCOCK, M. D.**
Baltimore, Maryland

SINCE Sauerbruch[1] first severed the phrenic nerve in 1913 many surgical procedures have been employed in producing hemidiaphragmatic paralysis. In order to evaluate permanent phrenic interruption as a therapeutic measure from the viewpoint of the internist, a study was made of all of the cases of avulsion done at the University Hospital from 1927 through 1938.

The group totaled 56; 52 whites and four negroes. Twenty-six were males and 30 females. Their ages ranged from seven to 58 years. The operation was done for tuberculosis with the exception of six cases of bronchiectasis and two cases of pulmonary abscess.

The operative approach was through a transverse supraclavicular incision three and one-half inches long, extending backward from the posterior border of the sternomastoid muscle. The sternomastoid was drawn forward, the trapezius backward and the scalenus anticus exposed. The phrenic was usually found running across the ventral surface of the scalenus anticus; it was injected proximally with one-half per cent novocaine and then subsequently severed and the distal end was avulsed from the thorax, removing as much nerve as possible. Avulsion was done alone or in conjunction with scalenotomy, (dividing the scalenus anterior, middle and posterior at the midpoint of their bellies).

The length of nerve avulsed is of importance because of the possibility of return diaphargmatic function unless all auxiliary branches are interrupted. In this series the maximum avulsed length was 30 cm. and the minimum 2.5 cm. Matson[2] stated that an avulsion of less than 10 cm. meant a return of diaphragmatic function in 25 to 30 per cent of all patients. Schwatt[3] concluded that an avulsion of 10 to 12 cm. was necessary as this approximated the distance from the operative site to the hilum and was sufficient to interrupt all accessory fibers. The simplicity of the operation rendered the period of hospitalization very short. The average stay in all cases was four days. The time required for the operation was a minimum of 30 minutes and a maximum of one hour and 10 minutes.

There were two postoperative complications, shortness of breath of three days' duration and a mild wound infection. While this series was small, none of the reported serious complications were encountered, such as hemorrhage from the phrenic sheath, hemoptysis from an adherent phrenic tugging at infiltrated lung tissue and reflex cardiac and respiratory disturbances.[4] Schwatt[3] reported cutting of the cervical sympathetic with a Horner syndrome. In addition, Berry[5] mentioned spontaneous pneumothorax, mediastinal emphysema, pulmonary edema and pulmonary embolism. As late complications Stanbury[6] wrote of distortion and deformities of the abdominal viscera and Bonafe and

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**Dr. Aycock is the surgeon on these cases.

Pulain[7] of two cases of volvulus of the stomach.

Diaphragmatic adhesions are of importance in cases in which avulsion of the phrenic is contemplated. In this group 22 had x-ray evidence of pleural involvement with obscuration of the costophrenic angle or tenting, but there was preoperative fluoroscopic evidence of some mobility of the diaphragm in 43. All but four showed postoperative diaphragmatic elevation and in these, parietal adhesions were a deterrent to diaphragmatic rise preventing the adherent lung from carrying the diaphragm up with it. Pollock and Forsee[8] believe that a total pulmonary symphysis of the lung to the diaphragm is of greater value in compression and relaxation than a parietal symphysis and it is also an important aid in obtaining good results.

INFLUENCE ON CLINICAL FINDINGS

In this group though there was a decline of one to two degrees Fahrenheit in temperature after operation this was probably incidental rather than specific. The pulse rate was not influenced consequent to the positional alteration of intrathoracic organs and changed intrathoracic pressure. Generally the pulse was slower after the operation probably because of a decreased toxic absorption. With the exception of dyspnea in the one instance mentioned, respiratory rate was unaltered.

As so commonly seen in tuberculosis blood pressure readings were on the low side of normal with only three exceptions. Of these, all females, one had a systolic reading of 144 mm. of hg. (lung abscess) and two of 140 mm. of hg. (tuberculosis) with diastolic levels respectively at 100, 95, and 80 mm. of hg. The systolic readings in the rest of the group ranged from 90-126 mm. of hg. with diastolic readings of 50 to 80 mm. of hg. In no instance was there more than 20 mm. of hg. change in the systolic readings after operation. In three the systolic was somewhat (102-108; 100-120; 90-100) higher than before the operative procedure. Diastolic pressure was unaltered in all.

When the operation is successful a prompt elevation of the diaphragm may be expected but by no means is the immediate elevation the maximum which may be obtained. Anderson[9] states the diaphragm may continue to rise for months. In a patient on whom the initial rise was only three cm., Matson[2] reported a rise of 9.5 cm. at the end of a year and 13 cm. two years postoperative. This occurred on the left side. His highest rise on the right side one year after operation was 8.5 cm. Anderson gave as his average, immediate rise, right side 4.9 cm., left side 4.2 cm. In our cases the maximum rise noted was nine cm., which occurred on the left side and the minimum 2.75 cm. was also on the left side. The maximum elevation on the right side was five cm. The average rise in all patients without reference to the side was 4.5 cm. Because most of the patients were from sanatoria out of the city it was impossible to determine their eventual elevation. It was observed, however, that the greatest immediate rise occurred in an upper lesion and the minimum rise in a basilar lesion.

INDICATIONS AND CONTRAINDICATIONS

A survey of the literature gives the following indications for phrenic neurectomy:

(1) Unilateral disease under routine rest for six months and no symptomatic or x-ray evidence of improvement.

(2) Obliteration of a cavity by phrenic neurectomy instead of repeated pneumothorax.

(3) Cases in which pneumothorax has failed because of adhesions.

(4) Early unilateral basilar lesions.

(5) As a matter of routine preliminary to thoracoplasty.

(6) In conjunction with pneumothorax where it reduces the degree of required pulmonary re-expansion and tends to prevent mediastinal retraction.

In our cases the indications are summarized as follows: (1) 16 cases, (2) 15, (3) eight, (4) 10. In this class were two cases of pulmonary abscess and six cases of bronchiectasis.

Because of the bad results (bronchial block, abscess formation and diffuse pneumonitis) following phrenic neurectomy the operation has fallen into disrepute in these conditions. (5) Seven cases.

The contraindications to avulsion of the phrenic nerve are: Far advanced bilateral disease, phthisis florida, miliary pulmonary involvement, obvious cardiac disease and general debility.

Phrenicoexeresis is not successful in every instance and various reasons can be advanced for its failure. First and foremost of these is avulsion of an insufficient length of phrenic nerve. Occasionally some other nerve or structure may be avulsed which is mistaken for the phrenic or there may be a failure to find the nerve at the time of operation. Notwithstanding the following statement made by Purce and Clarke:[10] "Experience has shown us that phrenic avulsion may be very successful even when the pleural surfaces adhere densely." I wish to stress another factor for failure, that is, dense parietal adhesions.

PURPOSE OF OPERATION

The object of phrenicoexeresis is pulmonary rest. Weber, Jacobson and Holcomb[11] state that elevation of the diaphragm reduced lung volume one-sixth to one-third. As to the mechanics by which benefits are derived some writers speak of compression and others of relaxation of the lung. By far the most satisfactory explanation of the good results is advanced by Margaria,[12] whose experimental work leads him to conclude that the improvement resulting from phrenicoexeresis is due not to compression but rather to relaxation and atelectasis of the lung with bronchial stenosis, anoxemia with consequent fibrosis, and to venous and capillary stasis with subsequent increased temperature of the bronchial air.

According to the classification of the American Sanatorium Association scheme 16 cases in this study were in the group of far advanced disease and 32 moderately advanced. There were in addition two cases of pulmonary abscess and six of bronchiectasis. The localization of the lesion was upper in 35 and basilar in 21, unilateral in 42 and bilateral in 14. The operation was performed on the right side in 26 and the left side in 30. The anesthetic employed was local except in nine on whom avertin or gas was used. Complicating findings at the time of operation were: tuberculous laryngitis, two; non-tuberculous pyelitis, one; endocervicitis, one; diabetes mellitus, controlled, one.

MIGRATION

Since tuberculous patients migrate from one sanatorium to another, follow-up information was difficult. With the cooperation of the city and state health departments and the superintendents of the four state tuberculosis sanatoria, information was obtained on 44. No information on 12.

Of the 32 on whom phrenic avulsion alone was performed no information was obtained on five. Of the remaining 27, nine were dead, seven from tuberculosis and one had additional surgery (thoracoplasty) preceding death; one died from diffuse pulmonary spread of abscess and one from bronchiectatic multiple abscess formation (autopsy). Of the 18 living, four were in sanatoria under treatment, three had additional surgery, two had thoracoplasty and one lobectomy. The remaining 11 were living a normal life or had some restrictions.

Of the 24 cases on whom phrenic avulsion was done in conjunction with scalenotomy no information was obtained on seven. Of the remaining 17, 10 were dead, all from tuberculosis, and one had additional surgery, thoracoplasty. Of the seven living, one was in a sanatorium under treatment and one had a thoracoplasty and one a contralateral pneumothorax. The remaining four were living a normal life.

Not considered for the purpose for which the phrenic operation was done, but as a summary of all causes whether the sole procedure or in conjunction with scalenotomy the results obtained in the survey shows a 44 per cent improvement with a mortality rate of 33

per cent after 11 years. Graham,[13] Singer, and Ballon report a 58 per cent improvement in their 54 cases after one year of observation. O'Brien's[14] claim of 82 per cent improvement in 500 cases seems better than reported by other clinics. Nehil[15] and Alexander after a six year survey summarize their results on 654 phrenic nerve interruptions as follows: "In summary, phrenic paralysis fulfilled our expectation of it in 58 per cent, partly fulfilled it in six per cent, failed to fulfill it in 30 per cent and in five per cent the result is unknown to us."

SUMMARY

While our group of cases is small, their study showed the best results were obtained with phrenic avulsion alone, or in conjunction with scalenotomy, in unilateral disease, moderately advanced and under the indication (1), viz., disease under routine rest for six months and no evidence of improvement. The left side showed a slightly better result than the right side (eight to seven). The first phrenic operation was done at the University Hospital in 1927 and it is reasonable to suppose a greater selectivity was employed in the later cases. Fluoroscopic examination was of greater value than x-ray in determining mobility of the diaphragm. Dense parietal adhesions are another cause for failure in diaphragmatic rise. The writers at present concur with Alexander[16] that phrenic nerve operation alone can accomplish all that combined phrenic and scalenotomy can accomplish. We would like to state that the indications now employed for interruption of the phrenic nerve at the University Hospital are summarized as follows:

(1) Cavities at the level of the eighth rib posteriorly or below with the lung free of disease on the contralateral side.

(2) A temporary or permanent phrenicoexeresis may be done when the apex of the lung is adherent to the superior aperture of the thorax and to the diaphragm below and a lesion exists in the upper lobe and pneumothorax is not possible or does not give adequate rest to existing lung disease.

(3) In some instances to lessen the area of re-expansion in cases of pneumothorax; may be temporary or permanent.

(4) In bilateral disease, a temporary may be done to determine reaction of patient to collapse procedure and many times marked improvement follows.

(5) To increase the interval between refills in pneumothorax.

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Less than ten minutes of a football game is actually devoted to play, Alfred E. Parker, Berkeley, Calif., points out in *Hygeia, The Health Magazine*. The remainder of the game time, totaling about forty-eight minutes, is used to line up for plays and to call signals.

ARACHNIDISM *

By F. C. HODGES, M. D., F. A. C. P.
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AT 2:00 p. m., August 17, 1940, a white man entered my office half supporting his wife, aged 22, para one, weight 89 pounds. She appeared to be in shock and complained of excruciating pains all over, most extreme in the back, next in the abdomen. Three hours previously, while lifting a board in the front yard, she felt a sharp prick, like that of a needle, on the ring finger of her right hand. Immediately she left the scene and retired to the house, without seeing or searching for the source of the pain. During the next two or three minutes a small white area appeared at the site of the initial pain; then her right arm began aching and the fingers of the right hand became red. Half an hour later there was aching in the right axilla and breast, following which her entire body, especially the lower portion of her back, was seized with an excruciating, throbbing, aching pain, with moderate headache. One hour following this she became nauseated but did not vomit, and noticed numbness with partial paralysis of both arms.

When first seen by me, severe backache was the chief complaint, while there was a stinging in the affected finger. Unable to stand alone and perspiring freely, she appeared in a state of apprehensive misery, pain and shock, for which one-fourth grain morphine was injected. Her temperature was 98, pulse 84, of good volume, the abdominal muscles were rigid without any localizing tenderness; the skeletal muscles were somewhat tense. Half an hour later, as most of the pain had disappeared, she was sent home.

The following morning she reported that she had not slept on account of pains in her back and abdomen, even though she took one-fourth grain morphine. Her pulse was 76, full and and regular; temperature 98.7, blood pressure 140/90, hemoglobin 89 per cent. Both legs ached, while occasionally her right arm became numb and partially paralyzed for a few minutes. There was marked edema of both lids of both eyes, but no remaining evidence of injury to the affected finger. Her tongue was coated and protruded in the midline. The patellar reflexes were equal and somewhat hyperactive, the pupils were small and reacted to light and accommodation; no ankle clonus was elicited. The abdomen was soft but tender all over, and the spleen not palpable.

At 2:00 p. m., she was reported to be much worse and she was sent to the hospital, where 10 c.c. of 10 per cent calcium gluconate was given at once intravenously. This was followed by marked relief from pain. At this time her temperature was 99.5, pulse 92, respirations 20. Because of inability to void, she was catheterized at 2:30 p. m. and again at 6:00 a. m., clear urine being obtained. The calcium gluconate was repeated the following morning and again gave some comfort. Feeling much improved the afternoon of the second day, she returned to her home.

She remained weak for five days, with an almost constant ache of her right arm, a part of which she attributed to an improperly set wrist fracture; but she complained of no discomfort in the bitten finger.

On September 4, fifteen days after the bite, she felt as well as ever in every respect.

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*Read before the Cabell County Medical Society, September 12, 1940.

There was marked desquamation of the bitten finger.

Inasmuch as the symptoms were those described following the bite of the black widow spider (Latrodectus Mactans) the husband was instructed to search for them around the premises. He soon informed me that a neighbor had for some time been interested in spiders and had quite a collection of them in alcohol. He was able to collect three living specimens which were placed in a jar; one has survived while two died the following day, only their legs and the shells of their bodies remaining.

BLACK WIDOW SPIDER

The black widow is a coal black spider marked with red or yellow or both. It varies greatly in its markings, the most consistent being one shaped like an hourglass on the ventral aspect of the abdomen. The female when full grown, is often one-half inch in length, with a globose abdomen marked with one or more red spots over the spinnerets and along the middle of the back; these spots, however, vary greatly in number and size and may be wanting entirely. The male is much smaller than the female, measuring about one-fourth inch in length and is even more conspicuously marked, having in addition to the marks of the female, four pairs of stripes along the sides of the abdomen. It is a curious fact that immature females are often marked like the males. The marking of the female spider is usually red and stands out in bold contrast to the blackness of her body. The spider's head is small and has two antennæ or feelers. These are brush-like and below these feelers are two pincers. These are tipped with very hard, keratin-like prongs, which are the fangs through which the female spider deposits her poison. In the pincers, lying in their substance, along its medial aspect, there is a little tube which apparently conducts the poison from the poison gland, situated at the base of the pincers.

The poison glands are very minute, and consist of a very fine membrane-like sack which, as a rule, can be extracted with the fangs. The amount of toxin contained in each sack varies with the time which has elapsed since she last struck a victim.

This species is very common and widely distributed in the south. It is found under stones and pieces of wood on the ground, about stumps, in holes in the ground, and about outbuildings. Often other smaller and less ferocious spiders are found under objects together with the black widow, the former being choice food. It spins an irregular amorphous web, having none of the beauty and symmetry of many other spider webs. In most cases its web can be recognized at a glance by the coarseness of its thread.[1]

The belief in the venomous nature of the bite of this species is widespread. Doctor Merriam (quoted by Comstock) makes the following statement: "Whenever I have questioned the Indians about this spider in California, they uniformly rank it with the rattlesnake as poisonous. To poison their arrows they mash the spider and rub the points of their arrows in it."

SYMPTOMS

In order to describe accurately the symptoms of arachnidism, Blair[2] allowed an adult female black widow spider to bite him for ten seconds on one of his fingers. He noticed a bluish pinpoint mark at the site of the bite and divided the course into three stages. The symptoms which followed closely resemble those of the patient above described.

First Stage: Lymphatic absorption, with a throbbing hot pain in the bitten finger; the pain extending upward to the metacarpus within twelve minutes after the bite. Within fifteen minutes there was a dull aching pain in the axilla, the whole arm had a dull, aching, slightly numb feeling, followed by an aching pain over the left side of the chest; then pains over the precordium.

Second Stage: Vascular Dissemination—There was a dull, drowsy, lethargic feeling, aching epigastric pains, a flushed headachy feeling with aching in the neck muscles and a feeling of malaise.

At this stage the observations were taken

over by an associate who reported that severe pains were present over the whole abdomen, which was tense. There was a trembly feeling in the legs. Two hours later there was severe aching in the lumbar region, abdomen and chest; speech was difficult and jerky, respirations rapid and labored, the abdomen was rigid; the heart sounds slow, regular and normal in character; the pulse weak and thready, rate 60. Agonizing lumbar pains followed. The patient stated that it was torture to lie still on his back while the electrocardiograms, which were normal, were being made. He was placed in a hot bath, which gave some relief.

Third Stage: Elimination—Three hours later he felt better and was given morphine, one-fourth grain. Vomiting now occurred.

Pain of various kinds persisted in varying degrees for a period of eight days, following which his health has remained excellent.

Local Reactions: The injury caused by the bite usually soon disappears but may be followed by a secondary infection. Sloughing does not occur.

Latrodectus Mactans (Black widow spider) Natural size. Dorsal aspect.

Head. Four times natural size, showing details of the two fangs, which are attached to the pincers.

Blair states that the sequence of symptoms following the injection of venom by Latrodectus Mactans, the only poisonous spider in the United States, is sufficiently characteristic to entitle it to recognition as a clinical entity in the field of general medicine. Bogen[3] states that of 600 reported cases, there were forty deaths (6.6 per cent). Also, he believes that many unnecessary operations upon patients could be avoided if all physicians recognized that an acute condition with rigidity of the abdomen, mild fever, leucocytosis, and occasionally nausea and vomiting, may supervene as a result of the bite of the black widow spider.

TREATMENT

General: Morphine should be given to control the pain, followed by intravenous calcium gluconate, 10 c.c. of a 10 per cent solution, or magnesium sulphate, 10 c.c. of a 10 per cent solution. Hot baths for a duration of one-half to one hour give temporary relief. Stimulation and alcoholic drinks are usually contraindicated.[4]

Serum from convalescents and from animals artificially immunized against the venom of the spider has been used in scores

Twice normal size. Ventral aspect, showing the hour glass marking.

of cases, but the exact value is not yet certain.[4]

Local: This should consist simply of the application of an antiseptic. Additional trauma by incisions, cauterization, or the injection of hypothetical antidotes should be avoided.

Local Distribution: The frequency with which the black widow spider is found in this vicinity seems to be in direct proportion to one's interest. Since asking for specimens I have had no less than twenty brought to me within a period of two weeks, by several different persons from different localities. Also, I have since seen two other persons in this

city who several years ago were made seriously ill by the bite of the black widow spider. During conversations with physicians from the south I found that arachnidism is of such relatively common occurrence that its presence excites no unusual interest.

SUMMARY

1. A case of poisoning by the bite of a black widow spider is reported.

2. Its classification as a distinct medical entity is stressed.

3. The frequency with which it resembles an acute surgical abdomen, followed at times by useless surgery is discussed.

4. The treatment consists locally of the application of antiseptics without any surgical interference. The general treatment consists of opiates for the immediate relief of pain; the intravenous injection of 10 c.c. of a 10 per cent solution of calcium gluconate or magnesium sulphate, repeated if necessary, and hot baths for the duration of one-half to one hour.

5. The frequency with which the black widow spider is found in this vicinity varies with one's interest. During a period of less than three weeks more than twenty have been collected. The number of cases of arachnidism appears small considering the numbers and the distribution of the spider.

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SUPRAPUBIC TRANSVESICAL REPAIR OF VESICOVAGINAL FISTULAS

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During the past ten years, I have successfully operated upon three cases of vesicovaginal fistula by a method that seems unfamiliar to many surgeons. In all three cases the usual vaginal operations had been unsuccessfully employed one to three times before the patients came under my care. An abstract of these cases with a description of the operation and a discussion follow:

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Case 1: Mrs. N. D., a fifty-two year old white woman was admitted to the hospital in May, 1929, complaining of vaginal leakage of urine. She had been operated upon two years previously for suspected carcinoma of the uterus. The operator accidentally opened the bladder and made an attempt at closure at the time. Three later attempts by the vaginal route were also unsuccessful. Examination showed no evidence of carcinoma. There was a vesicovaginal fistula, one-half inch in diameter, presenting in the midline of the bladder, about three-quarters of an inch above the trigone. The bladder mucosa was in normal condition. The fistula was repaired transvesically. Postoperatively, she was drained suprapubically fourteen days and transurethrally eighteen days. She was discharged cured a week later. Examination a year later showed that the cure had persisted.

Case 2: Mrs. J. C. B., a forty-three year old white woman was admitted to the hospital in December, 1936, for vesicovaginal fistula. Six months previously she had undergone hysterectomy and appendectomy. Urine leakage from the vagina had appeared a few days after operation. Cystoscopic examination showed the bladder mucosa in normal condition and a vesicovaginal fistula very similar to the one described in the preceding case. Vaginal repair of the fistula was done, and at the close of the operation methylene blue injected into the bladder did not appear in the vagina. Neverthe-

less, the fistula re-established itself within a few days. A month later the fistula was successfully closed by the transvesical operation. She was kept on her side for one week after the operation and drained suprapubically and transurethrally for fourteen days. Three years after operation there had been no recurrence.

Case 3: Mrs. J. W., a thirty-two year old white woman was admitted to the hospital in March, 1940, for cure of vesicovaginal fistula. It is uncertain whether this was a postoperative sequela or the result of some vaginal trauma. A member of the surgical staff was unsuccessful in obtaining a cure by the transperitoneal approach. A later operation by the transvesical route resulted in cure. The bladder was normal four months later.

DISCUSSION

Since this communication deals essentially with therapy, scant attention is devoted to etiology. Most vesicovaginal fistulas now result from accident, either operative or obstetrical, and from carcinoma of the cervix, with or without radiation therapy. It is probable that these latter cases are beyond hope of cure by plastic operation on the bladder.

In the surgical treatment of vesicovaginal fistula, approach may be by one of three routes, the vaginal, the transvesical or the transperitoneal. In the majority of cases, the vaginal approach is simpler and entirely adequate for the proper handling of the existing pathology. Each operator's ingenuity and experience will enable him to adopt local measures to the needs of the patient. For example, a hitherto undescribed maneuver which I have found helpful is to depress the floor of the bladder with a Cameron light passed through the urethra. In the occasional case in which the fistula lies very high and posteriorly in the vaginal vault, or in which scar tissue in the vagina makes accessibility to the fistula difficult, other approaches may offer important advantages. In such cases, the transvesical or the transperitoneal approach should be considered. Where the transvesical incision is made, a sound in the bladder with the point directed upward is of considerable assistance in localizing that collapsed organ. I have found it advantageous in such cases to use a transverse abdominal and bladder incision. The fistula is usually underneath the incision and can be brought into the operative field either by an assistant's finger in the vagina pressing upward or by the use of a hook. Where the vaginal or transperitoneal approach is utilized, catheters should be placed in the ureters. In the transvesical operation, since both ureteral orifices can be visualized at all times, I have found no use for catheters. The chief difficulty with the transvesical approach is that the patient has usually been operated upon one or more times previously through lower abdominal incisions and considerable difficulty may be encountered in exposing the bladder. The transperitoneal operation attacks the fistula from behind. It offers less visibility than the transvesical approach and considerable difficulty when there are intra-abdominal adhesions. It is best adapted to the approach of vesicouterine and enterovesical fistulas.

CYSTOSCOPIC EXAMINATION

No matter what the approach, certain principles must be observed to obtain satisfactory results. The first of these is the correction of any complicating bladder pathology. This, of course, calls for a cystoscopic examination. The fibrous tissue of the fistulous tract should be excised completely and the bladder separated from the vaginal wall. This is easily accomplished ordinarily by sweeping a finger between these layers. When this is accomplished properly, coaptation of the vaginal wall, bladder wall and vaginal mucos is easily secured. Occasionally, it may be found that difficulty will arise in coaptating the vaginal vault. In this case, proper incisions in the vagina will permit sliding of enough tissue to cover the fistula. Closure should be in three layers. I have used plain and chromic catgut indiscriminately in the vaginal layer and bladder muscle with equally satisfactory results. I prefer plain catgut for the bladder mucosa. In some cases the sutures have been interrupted, in others pursestring and in still others continuous. Seemingly, it makes no

difference. Where reliance must be placed on the tensile strength of silver wire or other metal sutures, it is probable that mobilization has not been properly effected and results will not be good.

Postoperative care is of extreme importance. It is probable that transurethral drainage by catheter would adequately serve these patients. However, I agree with other writers in feeling that the suprapubic catheter offers a safety valve and insures pressure being kept off the suture line in case the urethral catheter fails to function. The ideal postoperative position is on the abdomen for several days. It is extremely uncomfortable for the patient but I have been successful in obtaining it for the first forty-eight hours. Thereafter, the patient should lie on her side for four or five days longer. The period of drainage in these cases has varied from fourteen to eighteen days. Ten days would probably be adequate.

THE OPERATION

There follows a description of the operation as performed. A No. 22 sound is passed to the bladder and the point directed upward. A transverse abdominal incision, four inches in length is made, one and one-half inches above the pubes. This incision is deepened to cut through the superficial fascia. Where the anatomical relations have not been destroyed, the muscles are split in the midline and retracted outward. Where there have been previous operations, it will be found necessary to cut across the muscles. Once it has been determined that the peritoneum is not in the operative field, an incision is made over the presenting point of the sound. This incision is enlarged laterally to the indicated extent. An assistant's fingers are now inserted in the vagina to push up the floor of the bladder. The fistula is excised with an abscess knife or other thin-bladed knife. After this has been accomplished, the operator separates by finger dissection the vaginal vault from the bladder muscle. The vaginal roof is closed from above with interrupted sutures. The muscle of the bladder is closed with a purse-string suture and the bladder mucosa with interrupted plain catgut. If possible, it seems wise so to close these three layers that the suture lines are not superimposed. The bladder is closed in three layers about a Pezzar catheter and a drain is placed over the suture line and brought out at the upper angle of the wound, alongside the catheter. An indwelling Pezzar catheter is then inserted through the urethra. After recovery from anesthesia, the patient is kept on her abdomen or side as described above. It is best that the bowels do not act for two or three days postoperatively. The urine should be kept acid while drainage tubes are in place.

SUMMARY

Three cases of vesicovaginal fistula have been presented in abstract. The report includes a discussion of the method of surgical approach and a brief description of the operation as successfully employed in three cases.

While the preceding report was in preparation a very complete discussion by Dr. Irving J. Farsht, covering the same ground, appeared in the *Journal of Urology* for September, 1940.

Stomach Cancer

A better classification of the different forms of stomach cancer according to their probable response to surgical treatment would make it possible to save many persons in whom the outcome is hopeful and thus would reduce the toll from this disease, which is responsible for approximately four per cent of all adult deaths, Rudolf Schindler, M.D., Chicago, suggests in *The Journal of the American Medical Association* for November 16.

If it could be established that some forms have on the average a good chance of recovery while in others the chances are slight, he says, the decision to operate could be placed on a more reliable basis.

Early diagnosis by means of x-ray and visual examination with the gastroscope (stomach tube) is the only possible way to discover cases of stomach cancer while they are still curable. Such examinations should be carried out in all patients who suffer from minor abdominal distress, slight lack of appetite and some loss of weight.

THE TREATMENT OF ACUTE DELIRIA*

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THE AUTHOR

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THE Psychiatric Division of Bellevue Hospital admitted over 28,000 patients during the year 1939. These cases represented every conceivable type of mental disorder. Because general hospitals wish to rid themselves of patients who are noisy, troublesome, uncooperative, suicidal or possibly dangerous to others, there is a constant stream of patients from the hospitals of New York City to the Psychiatric Division. During the year, the General Hospital of Bellevue transferred over 800 patients to the Psychiatric Division. A large number of these cases coming from general hospitals are restless, confused, delirious patients suffering from organic conditions of various kinds. They are usually transferred because they are too noisy or too uncooperative to be kept in general hospitals. In addition, there were approximately 12,000 alcoholic patients admitted in all stages from mild intoxication to delirium tremens and Korsakoff's psychosis. Approximately 6,000 of our admissions were treated in the psychiatric medical and psychiatric surgical wards which compose about 200 of our 630 beds. This number does not include the more disturbed patients who could not be kept on these wards but who could only be cared for on the wards especially designed for our most excited and disturbed patients. It will be seen, therefore, that the material at the Psychiatric Division of Bellevue Hospital includes all types of physical disorders complicated by alcohol or some psychiatric condition. To cite a few examples, may I say that during the year 1939 we treated nearly 1,000 skull fracture cases, mostly complicated by alcoholism, and that we cared for approximately 200 cases of pneumonia, 150 cases of pulmonary tuberculosis, 1,500 cases of cardiovascular disease, and nearly 2,000 cases of alcoholic psychosis including 200 cases of alcoholic encephalopathy.

From such an experience in the treatment of excited and delirious patients there are certain general principles of treatment which seem of importance and which can be emphasized. Although the cardinal principle of all treatment is to determine the precise cause of the disorder and treat the cause, and although there are many different causes for the deliria, there are certain general principles of treatment which remain the same throughout. Neglecting, therefore, the different causal factors which may require specific treatments, since such specific treatment is familiar to all of us, I shall concentrate on the factors which are common to all of these conditions and which can, in general, be treated in the same fashion irrespective of whether the delirium is due to a specific organism or to various toxins.

Nearly four years ago we decided to make a systematic study of these delirious, excited and uncooperative patients. We considered what methods of treatment were being used and the reasons for using them. We tried to understand what was going on in our patients, what happens to a patient who is excited and delirious. Then we tried to work out better methods of treatment based on specific studies made at Bellevue as well as any new reports

*Read before the joint meeting of the West Virginia State Medical Association and the Medical Society of Virginia at White Sulphur Springs on July 31, 1940.

of studies which were relevant to our problems.

I believe that I can make my presentation much more vivid and interesting to you if I adopt the historical method of presentation and describe our progress, step by step, in working out better methods of treatment.

RESTRAINT AND DRUGS

We first considered the problem of restraint and drugs. Restraint is used very frequently in the treatment of delirious and excited patients. The explanation commonly given is that the patient will not remain quiet in bed, that he may injure himself falling from bed, that he will exhaust himself by walking about or become chilled with resultant respiratory infection, and that he may harm himself or others.

We must admit that the average home or general hospital is not designed to care for overactive delirious patients. The structural arrangements of the average general hospital are satisfactory for treating other conditions but are seldom adequate for the care of the overactive, delirious patient. Restless, confused patients may fall out of windows or down shafts or stairs; they may secure drugs or sharp instruments and may harm themselves or others; they may be so noisy as to trouble the other patients; they may refuse to stay in bed and rush about with little or no clothing on—a situation which may be upsetting and disturbing to the other patients in the hospital and make impossible the retention of such a patient. Psychiatric hospitals are designed to prevent certain of these disturbances from occurring. Dangerous drugs and sharp instruments are kept away from the patient; the windows are guarded, and stairways are so arranged that patients cannot get to them. Conditions for segregating noisy patients and the use of soundproofing devices help to make such patients less disturbing to others.

When a physician is treating an acutely delirious patient in a general hospital or at home, he is very likely to drug the patient or to forcibly restrain him for some of the reasons which I have enumerated. When he becomes too noisy or too disturbed he is commonly labeled a mental case and transferred to a psychiatric hospital. I should like to point out, however, that many patients with obvious mental disorders are kept in general hospitals and that usually only the noisy, troublesome, or dangerous person is transferred to the psychiatric hospital. Coma is a mental disorder, but since the patient is quiet, remains in bed, and causes no disturbance, he is usually kept on in a general hospital, particularly if the cause of the coma is known and treatment is possible. If, however, the comatose patient requires tube feeding and is incontinent, he is very likely to be labeled a mental case and transferred to a psychiatric hospital.

In my opinion, a large percentage of restraint is due to lack of an adequate force of nurses. Our problem in such cases is to secure more nurses, but unfortunately budget limitations in hospitals and the private resources of patients do not enable us to do so. Under such conditions we must choose restraint as the lesser of the two evils but clearly recognizing it as an evil and never allowing ourselves to be satisfied with such a compromise.

EFFECTS OF RESTRAINT

The effect of applying restraint is often exactly the opposite of what is desired. The natural impulse of anyone is to struggle against restraint and many patients will exhaust themselves more rapidly in restraint than if allowed to get up and wander about.

We concluded, therefore, that while restraint might be necessary in some cases, it was usually of no value or was actually harmful to the patient and that the use of restraint should be kept at a minimum. Even when used it should not be allowed to remain on for long periods of time. Nurses were required to loosen a patient's restraint at least every two hours. Many accidents may occur to patients in restraint and there is always the tendency of nurses to pay less attention to patients in restraint.

We may consider next the use of drugs.

Drugs are commonly used to quiet delirious patients and put them to sleep. It may be argued, and with justification in some cases, that any harmful effect of the drug is more than offset by the quieting effect it has on the patient. This is undoubtedly true in a number of cases where restful, quiet sleep may be very important to a patient who is simply wearing himself out. An example of this is found in cases of cardiac decompensation where a state of confusion with fear and apprehension is very common. Many of these patients cannot relax or rest and something must be done to help the heart which is inadequate at best and which is rapidly being overwhelmed by the additional strain placed upon it. As an example of the beneficial use of drugs I would mention the use of morphine in cases of cardiac delirium. One of the best measures for relieving the anxiety and mild confusion of such cases is to give from one-fourth to one-half grain of morphine intravenously. Usually after such medication the patient will quiet down and sleep for several hours, thus receiving marked benefit both mentally and physically. As a rule, however, morphine is not the best drug for treating excited, disturbed or delirious patients. Morphine relieves pain. If the patient cannot sleep because of pain, anything that relieves the pain will allow him to go to sleep. Under such conditions morphine, of course, will produce the desired effect. It may often relieve certain feelings of anxiety and tension. It is not, however, a particularly good drug to use in the treatment of excitement. I would like to quote from one of the greatest authorities in psychiatry—Eugene Bleuler: "Opium and opiates are not hypnotics, but indirectly—by removing fear and psychic pain—they have a calming and even hypnotic effect. In psychoses, however, they do not achieve by far what their effects on the healthy would lead one to expect. With the exception of a few cases, their use can be dispensed with, and because the danger of habituation is very great, especially with psychopaths, there is good reason to avoid them as much as possible. To give opiates to an excited patient to facilitate transfer to an institution is hardly of any use, yet it constantly occurs, nevertheless." It may be pointed out further that morphine raises intracranial pressure and often masks signs of an associated intracerebral or intra-abdominal injury. One should also mention the old saying that morphine not only puts the patient to sleep but also the physician.

Hyoscine is a drug of somewhat uncertain effect, and one is inclined to use it as little as possible. It is frequently given with morphine. While this combination does have certain values, there are other drugs which are usually better and safer to employ.

Bromides have little value in severe excitement or delirium, their action being too mild. Because of their cumulative effects they should seldom be used.

BARBITURATES

Barbiturates are rather widely employed at the present time and the number of different derivatives is too great to attempt the description of each one. Sodium amytal has an almost specific effect in certain types of mental disorders but for quieting disturbed patients it is doubtful whether any of the various derivatives have any greater value than veronal itself. Many of the barbiturates are cumulative in their action; hence if used over any long period of time there is danger of producing a drug delirium. Particularly where bromides or barbiturates are being used to quiet a disturbed patient and where the patient gradually grows more disturbed, should the question of a drug delirium always be considered. In such cases it may be desirable to omit all medication for 24 to 48 hours to see if the patient does not quiet down. It may be stated as a general principle that hypnotics should be kept at a minimum in all cases of mental disorder and particularly so in acute delirium. As a general proposition, too much rather than too little drugging occurs. It is unnecessary to point out that in any suspected case, the urine or blood should be tested for bromides and barbiturates.

If a hypnotic is necessary, paraldehyde is probably the best and safest one that we have. Because of its vile taste and odor many patients object to taking it. However, alcoholics seem to enjoy it and one might almost say that a definite diagnosis of alcoholism can be made by offering the patient a drink of paraldehyde. If he takes it eagerly and seems to enjoy it, he is undoubtedly an alcoholic. Paraldehyde can be given not only by mouth but also intravenously and by rectum. It is probably the most widely used hypnotic in psychiatric hospitals but appears to be less generally used by the rest of the medical profession. In cases where patients have difficulty in retaining anything by mouth, paraldehyde should be given either rectally by adding it to a small amount of milk so that it will be less irritating, or it may be given intravenously.

CHLORAL HYDRATE

Another excellent hypnotic which has fallen somewhat into disfavor is chloral hydrate. As much as 30 grains may be given as a single dose, and this may be repeated in one hour if necessary. Chloral hydrate is a milder drug than paraldehyde and probably will not be so satisfactory for quieting extreme cases. In rather mild cases, however, it may work very well.

I would also mention the quieting effect of enemas. The reason for this is not entirely clear but experience has shown us that many restless, disturbed patients become quieter when given enemas. It does not seem likely that removal of toxic material from the intestinal tract would have such immediate effect. It has been suggested that dilation of the intestine has secondary effects on the autonomic nervous system.

Two other methods of treatment are generally used in psychiatric hospitals but are less well known in general medical circles. The first of these is the continuous bath. The water of the bath should be slightly below body temperature, usually 96 to 98 degrees Fahrenheit. The patient reclines on a hammock suspended in the water and may be kept in the tub quite long periods of time, even days in some cases. Many patients are greatly quieted by such treatment. It is also excellent both for the prevention and treatment of bed sores. Since the main weight of the patient is supported by the water there is little pressure on the dependent parts. Furthermore, the constantly flowing water washes out the infected sores and promotes healing. A moderate degree of fever is not a contraindication. Neither is menstruation or postpartum states.

VALUE OF WET PACK

The cold wet pack is often of great value. Sheets dipped in cold tap water are wrung out and wrapped around the patient. Blankets are then added outside the sheets. A hot water bottle is placed at the feet and an ice cap or cold cloths to the head. Typically, the patient feels chilly, followed by a rush of blood to the skin with a feeling of warmth and relaxation. Many times a patient will go to sleep. Usually a patient should not be kept in a pack for more than two or three hours. It may be used cautiously, even with a high fever, but such patients must be watched continuously for any signs of collapse.

One of the first problems confronting us was how to combat dehydration and the acidosis and undernutrition usually accompanying it. Modern medicine has emphasized the forcing of fluids and a high caloric diet. The practical application of these principles was most unsatisfactory. Patients would refuse all liquids and food but an overactive, febrile patient needs more liquids and food than the normal person. Attempts to give large amounts of fluids intravenously were seldom successful. The patient would often struggle sufficiently to withdraw the needle from the lumen of the vein. It was obvious that we could not get enough fluid by intravenous or subcutaneous method. Passing a stomach tube and force feeding was likewise unsatisfactory. Many patients would vomit if one tried to give as much as 1,000 c.c. at a feeding. The danger of an aspiration pneumonia (and abscess formation) or of an acute

asphyxia forced us to limit the feedings. After a careful study of the problem we came to the following conclusions:

The problem of dehydration is closely bound up with the loss of salt. Conversely, any attempt at hydration must consider the relation of salt and fluid. The average individual loses about 1,500 c.c. of fluid daily through the urine. But there are three other sources of water loss. About 400 c.c. of water is excreted from the lungs. Another 700 c.c. of water is diffused through the skin without the sweat glands being brought into action. The feces carry 100 c.c. of water from the system. The amount of fluid lost through the sweat is very variable. Thirty-three degrees centigrade is the critical temperature of the skin. Below it, sweating does not occur. Above it, the sweat glands start to work. A person doing clerical work in cool weather loses from 200 to 500 c.c. of water through sweat. On that basis, one must supply 3,000 c.c. of fluid daily to prevent fluid loss. But if a person is active or febrile, he eliminates still more fluid, particularly through sweat.

LOSS OF SALT

Closely related to the loss of fluid is the loss of salt. The kidney normally puts out 15 gm. of salt every 24 hours when there is little salt loss through the sweat glands. There is a reciprocal relation between kidney and sweat glands. If the patient is overactive and febrile, more salt is eliminated through the skin. The sweat glands are more permeable to salt at high temperatures so that the percentage of salt loss in the sweat increases.

As an extreme example may be cited the experiment of a normal man walking up a treadmill for three hours with an air temperature of 50 degrees to 55 degrees centigrade. Roughly 4,000 c.c. of fluid and 18 grams of salt were lost in his sweat. Cramps developed in the leg muscles soon after the experiment ended. After exertion in a hot environment sufficient to produce heat cramps it is estimated that the total volume of blood in the body may be reduced as much as ten per cent. Since the blood becomes more concentrated, an analysis of the blood may show an apparent increase of chlorides. It is our opinion that deprivation of water and salt occurs in the tissues before it does in the blood and that the blood will draw on the tissues for any substance necessary to preserve its normal constituency. From all this, it appears that ordinary studies of blood chemistry tell us little about salt loss from the body as a whole.

HEAT CRAMPS

It has been shown that heat cramps can develop even if one drinks large amounts of water. However, in 1922 Moss and Haldane pointed out that miners in Scotland who salted their beer and ate salty foods did not develop heat cramps, but that others did. Also many other studies have shown that heat cramps can be both prevented and cured by giving salt. We have recognized for a long time the necessity of forcing fluids in such cases but have not realized adequately the need of giving salt as well as fluid. If the salts of the body are depleted as well as the fluids, giving fluid without salt results in further elimination of fluid because there is not the salt necessary to keep it in the body, or if it is retained in the body it may cause edema. The recognition of the first part of this statement has led some to advocate the restriction of fluids in certain conditions such as head injuries and delirium tremens, feeling that forcing fluids will result in edema of the brain, thus resulting in harming rather than benefiting the patient. If, however, salt is given with fluids the edema will not occur and a very beneficial effect will be obtained by forcing fluids. In attempting to force fluids one frequently finds patients who object to taking further fluids. The patients feel water-logged and have great difficulty in taking more fluid, and it becomes difficult to build up the fluid intake to the desired amount. If, however, salt is given as well the patient develops a thirst and oftentimes will spontaneously request more fluids. In every well run saloon there are dishes of

salty popcorn, pretzels and highly spiced foods. It is well known that many chronic beer drinkers add salt to their beer. The reason for this is that it keeps up the amount of salt in the body even when large amounts of salt are being eliminated through the urine. One should emphasize, therefore, that as a general principle we force fluids but we also give considerable amounts of sodium chloride and probably some salt of calcium such as calcium lactate. It is possible to make up a fluid which will have much the same mineral constituents as normal blood and thus supply the needs of the body. Not only does salt enable the individual to drink more fluids, prevent the development of edema, and replace the salt lost through elimination, but if the kidneys are functioning in normal fashion salt will restore the normal electrolyte pattern. If the body is in an acid condition, chlorides will be eliminated and the acidity of the body will be decreased. If the body is too alkaline, sodium will be eliminated and the alkalinity of the body decreased. The use of fluids and salt, therefore, will largely combat dehydration and acidosis. Some persons find salt unpleasant to take and in some cases salt seems to irritate the stomach and cause vomiting. If enteric coated pills are used, these difficulties are done away with.

TREATMENT OF ALCOHOLIC DELIRIA

With these ideas in mind we started the treatment of our most excited and delirious patients by giving salt and forcing fluids. A large number of these cases were of alcoholic deliria. Two capsules of sodium chloride, one gram each, were given every four hours during the first day. Orange juice with one tablespoonful of sucrose in each glass constituted the bulk of all fluid given patients. Since the brain utilizes only carbohydrates, and McQuarrie's studies on diabetic children showed that the use of salt enabled the patient to metabolize more carbohydrates, it was felt that we had justification for giving the patient large amounts of sugar and salt. Also, in cases of liver damage there is a deficiency in glycogen reserve and it is important, therefore, to give carbohydrates. Utilizing this method of treatment for a period of eight months as compared with a six months' period prior to its institution, we found a drop of mortality rate from 17.3 per cent during the period preceding treatment to a mortality rate of 8.1 per cent during the time we gave salt and forced fluids. We found that patients who vomited frequently could usually retain orange juice. We also found that even when patients refused to drink, if a little orange juice was spilled on their lips they would often take the rest of the orange juice. In some cases we found that as soon as the patient had been given salt he would voluntarily request water. We also noted that when a patient had received considerable amounts of salt and fluid he often quieted down without having to receive hypnotics. Taking a second group who were not alcoholic we found that over a period of six months without special treatment there were 22 cases who showed marked dehydration; of these eight died. None of these patients had had fever due to dehydration on admission. For a period of five months we gave a patient who developed dehydration one gram of sodium chloride every four hours, or if the patient had to be tube fed he was given one quart of physiological solution of sodium chloride. Of the 14 patients who showed signs of dehydration with fever, not a single one died and the average duration of fever was one and one-half days as compared with a duration of seven days in the control group. Our experience was that, wherever possible, it was better to give salt and fluids by mouth rather than by the parenteral route, as there was not the danger to the circulatory system in trying to give large amounts of fluid. Pulmonary edema is likely to occur from large amounts of intravenous saline, especially if given at a rapid rate. We found that a number of patients who died with fever due to dehydration had been given continuous infusions of physiological solution of sodium chloride. We also tried out the use of hypertonic solution of sodium chloride, giving 300 c.c. of a

five per cent solution intravenously. In many cases we found that this had a quieting effect on the patients and that they would ask for water before the completion of the infusion. It was also felt that the temporary dehydrating effect of hypertonic solutions on the brain might be valuable in cases of deliria.

METABOLISM STUDIED

Following our experience with the beneficial action of forcing fluids and giving considerable quantities of sodium chloride, we endeavored to study the metabolism of these patients more carefully. In our alcoholic deliria we felt that the patient often had not been eating adequately for a considerable period of time and that a condition of starvation with acidosis and inability to assimilate carbohydrates normally was present. We did glucose tolerance tests on a number of these patients at the time of admission and then at a later date when they were convalescent. It was found that on admission the patients showed a sugar tolerance curve resembling that of a diabetic patient and that a week or so later, when convalescent, the sugar tolerance was improved and essentially normal. It was felt that the diminished tolerance was due primarily to an undernourished state which existed at the time of admission. With many of our patients it was often felt that there was considerable liver damage and that the organism was unable to store up glycogen and utilize it for nutritional purposes, and that many of our patients, therefore, would not have a reservoir of glycogen to draw upon and were unable to assimilate and utilize carbohydrates as well as the normal individual. All of this suggested the use of insulin together with fairly large doses of glucose as a means of combating the undernourishment of the patient. We also discovered that when a patient who has a high alcoholic content to his blood is given glucose and insulin, the alcohol will be eliminated from the blood at about twice the normal rate. Further, there is considerable evidence that insulin has a quieting effect on excited patients. I might point out that Sakel developed his theory of insulin shock treatment for schizophrenia from just this very fact. He first used insulin in the treatment of drug addicts with the idea that it had a quieting effect because of its action on the autonomic nervous system. Later he tried disturbed psychotic patients and discovered that when certain cases accidently went into insulin shock or coma that they appeared to be greatly benefited. We have found by experience that in disturbed patients insulin often has a specific quieting effect. For all of these reasons, therefore, we instituted the use of glucose and insulin. Where patients will take glucose by mouth, one may give from 50 to 100 grams of glucose, giving from 10 to 25 units of insulin. This may be repeated two or three times daily.

IMPORTANCE OF VITAMINS

Although vitamin deficiency may have been overemphasized and considerable exploitation of the public may have occurred, I believe that we must consider carefully the vitamin status of our delirious patients. I would point out that vitamin A has a definite value in building up the capacities of the organism to resist infection. Vitamin B, particularly B_1 and nicotinic acid, has a definite effect on brain metabolism and its absence may cause mental disorders. In vitamin C deficiency a delirium with scurvy may develop. It is, therefore, of particular importance that vitamins A, B_1, nicotinic acid and C be given in large doses to our patients. Vitamin B_1 has a fairly specific reaction toward the polyneuritis which often develops in alcoholic and other organic deliria. It is perhaps worthwhile to remind you that Korsakoff's original description of this psychosis characterized by a loss of memory replaced by confabulation and by polyneuritis was given to a group of cases most of which were not alcoholic but represented various organic conditions such as infectious and toxic states following childbirth, pneumonia, typhoid fever and arteriosclerosis. We have become so accustomed to thinking of Korsakoff's psychosis as due to alcohol that it is important to emphasize the fact that it is primarily a vitamin deficiency

condition. The polyneuritis associated with Korsakoff's psychosis clears up excellently in response to vitamin B_1. While it is doubtful if B_1 deficiency is the sole cause of the delirious picture, it may be one of the factors producing it.

Nicotinic acid seems to have a specific effect on certain severe deliria. In a paper on acute nicotinic acid deficiency encephalopathy we pointed out: "This syndrome may occur as the only manifestation of a deficiency disease or may occur in association with pellagra, polyneuritis due to vitamin B_1 deficiency, the oculo-motor disturbances of a central neuritis, or scurvy. The clinical picture of this encephalopathic syndrome is more or less well defined and is characterized by clouding of consciousness, cogwheel rigidities of the extremities, and uncontrollable grasping and sucking reflexes."

RESULTS OF CASES STUDIED

A case study of 150 cases showing this encephalopathic syndrome shows that without vitamins practically all of these patients died, the actual rate being 95.7 per cent in 47 subjects; when to the usual treatment of hydration, thiamin chloride (B_1) was added, the mortality rate was 100 per cent in 15 subjects. When, however, the entire vitamin B complex plus hydration was given, the mortality rate in 81 cases dropped to 61.9 per cent. In contrast with this, 22 consecutive patients were given nicotinic acid and only 31.8 per cent died. It appears, therefore, that a number of the acute deliria, particularly those occurring in alcoholic patients are definitely related to vitamin deficiency and that proper use of vitamins will aid in restoring many more of these patients.

It should be emphasized that these vitamin deficiencies may be superimposed on any delirious condition and thus produce serious complications. Prevention is better than cure, hence a high vitamin diet should be given all delirious patients.

Having carried out the various studies which I have mentioned and having applied them to the treatment of our patients, we have now evolved a certain routine for the treatment of all acutely disturbed and toxic patients. I shall describe this treatment as applied to the alcoholic delirium. The general principles are the same for all other deliria, but there will be certain variations in the treatment depending upon the cause of the delirium.

USE OF SEDATIVES

This treatment is based on the idea that the patient is probably suffering from dehydration, loss of salts, acidosis, malnutrition, vitamin deficiency and often gastritis and liver damage. The patient is excited, delirious and uncooperative. In the acute condition with extreme excitement, sedation may be necessary. The patient is commonly placed in a camisole while being treated but the camisole is removed as quickly as possible. Paraldehyde is the sedative of choice. If gastritis is present, paraldehyde is administered either rectally, giving about three to six drams diluted in milk, or intravenously 15 minims. Three hundred to 500 c.c. of five percent saline with 10 per cent glucose intravenously is administered and insulin is given subcutaneously, one unit of insulin for every two grams of glucose. This whole routine should be given in less than half an hour if possible. The patient will usually quiet down and go to sleep.

As the patient improves, or in patients who are more cooperative and less toxic, the patient is placed in a tub and preferably given an enema in the continuous tub, after which the water is turned on for the regular continuous bath at approximately 96 degrees Fahrenheit. If the patient will take food or medication by mouth, he is first given one-half ounce of colloidal aluminum hydroxide for the purpose of soothing the inflamed mucosa of the gastrointestinal tract. This is repeated twice a day. Sodium lactate is also given by mouth so that the patient receives approximately 50 grains a day. Salt tablets are given by mouth two or three times a day so that the patient gets a total of 90 grains of salt daily. The five per cent saline with

10 per cent glucose is given intravenously if necessary but wherever possible it is given by mouth. If the patient will take fluids freely he is encouraged to take orange juice which is usually well borne on a disturbed stomach. Glucose may be added to the orange juice if desired and insulin given as previously noted.

Special attention is paid to forcing vitamins. The patient is given vitamin A in large doses but care must be taken not to give it in a way to upset the stomach. Vitamin B_1 is given up as high as 100 mgs. a day. This may be given in a single dose intravenously or it may be added to food by mouth. Nicotinic acid is given in 100 mgm. doses by mouth five to 10 times daily. If necessary, it may be given intravenously. Vitamin C should be given, at least 50 mgs. three times a day. If the patient receives large amounts of orange juice, he will, of course, receive sufficient vitamin C in that fashion. Remember, however, that orange juice on standing loses most of its vitamin C, unless kept in a refrigerator in a tightly closed container.

THE LEVINE TUBE

If the patient will not eat and if his stomach is not so inflamed as to make gastric feeding undesirable, the patient may be placed in a camisole, a stomach tube passed intranasally and then kept in position for several hours. The Levine tube is probably preferable as it is of sufficiently small caliber that it will not produce vomiting and gag reflexes as much as a larger tube. With the tube one can start out by giving 100 c.c. of a 10 per cent saline solution. This is followed in about 20 minutes by 200 to 300 c.c. of water. In another 20 to 30 minutes this may be repeated. The amount given at each feeding should be sufficiently small so as not to provoke vomiting or to unduly upset the stomach. Large amounts are likely to induce vomiting and there is the danger of regurgitation which may be followed by aspiration which may even cause death at once by asphyxiation or it may set up a pneumonia. After giving approximately 1,000 c.c. of water one may give nutritive feeding. Glucose is probably the most easily absorbed form of energy and one very desirable feeding is to give 300 c.c. of orange juice with 50 grams of glucose added to it. Twenty-five units of insulin should be given at this time. The Levine tube is then withdrawn and restraint removed. As the patient improves, still further tub therapy is continued if possible, and the patient is allowed to take a more liberal diet. Colloidal aluminum hydroxide may be continued as long as gastritis is present, in which case the diet must, of course, be bland and non-irritating. Salt is continued at the rate of 90 grains a day in salt tablets. This makes the patient very thirsty and he will usually ask for water and drink large amounts. Orange juice can be given very freely. Insulin is continued in small decreasing doses both for its benefit in quieting the patient and for its effective assistance in the utilization of carbohydrates. Large amounts of vitamins are continued as outlined previously.

If this general routine is carried out in the treatment of acutely disturbed, delirious and uncooperative patients, I am certain that the period of delirium will be markedly shortened and the recovery rate will be greatly increased. It is understood, of course, that specific treatment is to be given in all cases depending upon the cause of the delirium and that individual modifications must be made when necessary. It is not intended that this treatment should be carried out in an absolutely fixed fashion, since the essence of the treatment of all patients is to individualize.

DISCUSSION

Dr. Joseph R. Blalock, Marion, Virginia: We have all enjoyed very much Dr. Bowman's paper and wish to thank him for bringing before us in so clear and comprehensive a manner these particular studies that have been carried out by himself and his co-workers at Bellevue.

In no other psychopathic hospital in the country is there a greater number and variety of such acute problems, where patients have had to be shifted from general hospitals because they were considered too disturbed to keep. Dr. Bowman has pointed out that the immediate essential problem lies in

caring for the physical condition of the patient, and that certain cardinal principles of treatment must be followed. Putting into practice such general principles has resulted at Bellevue in marked reductions in mortality in special large groups, particularly in delirium tremens and nicotinic acid deficiency encephalopathy.

Only certain cities are fortunate enough to possess psychopathic hospitals or centers to which such patients may be sent for observation and treatment. Unfortunately, in Virginia at least, the physician, when a medically ill patient becomes mentally disturbed, may have to be adjudged legally insane, and sent to a state hospital, too often with a brief sojourn in jail. The psychotic condition clears up in a few days and the patient has been pronounced legally insane.

There should be established psychiatric pavillions or wards in every city or center where such patients may be treated. Furthermore, there should be provided in general hospitals one or two specially equipped rooms, with bath, toilet facilities and special windows. There are now screen windows available which are entirely escape-proof and appear just like any other screened window. Into such a room a delirious pneumonic patient, one with a bromide delirium, postoperative panic states, and other psychiatric problems may be cared for with safety. The physical therapy department should contain a tub for continuous bath, and its personnel should be able to administer sedative wet sheet packs. Since nurses are more and more receiving training in psychiatric nursing, they will be more competent to carry out the necessary special nursing procedures.

Concerning the bromide deliria:

Routine blood bromide determinations have revealed high blood bromide levels in a surprisingly large number of new admissions to state hospitals. A physician from one state hospital recently told me that his hospital was receiving fewer and fewer such patients because the general medical men in that part of the state were becoming more aware of this possibility, and disliked the chagrin of having one of their patients admitted with such a diagnosis.

I find that physicians in practice almost never use paraldehyde. They are also adverse to using amytal or sodium amytal. I am in full sympathy with all that has been said concerning sedative treatment and restraint. We at our hospital are especially inclined to use continuous tubs, sedative wet sheet packs and colonic irrigations, so far as practical in place of drug sedation.

I can add little to and only commend what has been said concerning the schedule of treatment as now used at Bellevue. The chronological development is of special interest for we have all been attempting to keep up to date with the recent developments in various fields. For example, in 1935 Harris, Poliak and myself reported the treatment of a severe case of pellagra and alcoholism with recovery. A high vitamin diet, concentrated liver extract, vitavose, crystalline ascorbic acid, dilute hydrochloric acid, iron ammonium citrate, yeast tablets, a transfusion, all contributed to treatment. Nicotinic acid in its present form was not yet available.

Similarly in the early 1930's when the first general paralytics were receiving electrically induced fever, no provision was made for the salt intake made necessary by the profuse sweating. These patients tolerated treatment much better when we commenced giving them sips of diluted or normal saline.

Again I wish to thank Dr. Bowman for his fine and eminently practical contribution.

Dr. Archer A. Wilson, Charleston: Except in rare instances, morphine should not be used in cases of head injuries or cases of increased intracranial tension of whatever cause, because it further increases tension and depresses respiration which may be already embarrased by the lesion responsible for the mental state. In addition, in head injuries particularly morphine may mask the very important pupillary changes and the all important state of consciousness of the patient. There is no more justification for using it here than in an acute abdomen before a satisfactory diagnosis has been established.

Because of the extensive self-medication with the bromides and barbiturates, many confused and delirious patients may be found to be suffering from an accumulation of these drugs. For this reason, these drugs should be used with care where the necessity for their use extends over a period of time or where large doses are required for the control of a restless and noisy patient. We have found paraldehyde and avertin very useful for this type patient and the least objectionable of the various drugs.

Because of the studies of Dr. Bowman and his co-workers, and of other investigators, the "encephalopathic syndrome" consisting of the clinical

picture of clouding of consciousness, cogwheel rigidities of the extremities, and uncontrollable grasping and sucking reflexes is now thought to be due to nicotinic acid deficiency and the previously high mortality rate has been markedly reduced by the use of nicotinic acid given in five per cent dextrose in normal saline. The treatment of delirium tremens has likewise been put upon a rational basis by the administration of a high caloric diet rich in vitamin B, glucose, sodium chloride and fluids.

Every effort should be made to determine the cause of the mental disturbance. Common causes are the various infections, toxins, the insanities, drugs, alcohol, deficiency disease, dehydration, arteriosclerosis, brain tumors or abscess. Search should be made for evidence of a previous and often trivial head injury because a resulting chronic subdural hematoma often presents itself as a disturbance in consciousness or personality. If a cause can be found, then its specific treatment should be applied. Where a cause cannot be found, certain general measures are indicated. These call for the correction of fluid and electrolyte imbalance, proper feeding with attention to vitamin needs and indicated care for the physical condition of the patient.

Doctor Bowman's paper appears to suggest that something by way of preventative psychiatry might be employed by the giving of proper attention to the fluid and salt balances in the various medical and surgical illnesses and injuries. Thus those cases of deliria associated with fever and dehydration will not so likely occur.

The onset of active delirium is often heralded by sleeplessness and nervous irritability, anxiety, muscle twitching or apparent apathy. It would appear, therefore, that the judicious use of sedatives at this time would save patients as well as the physician treating them, much mental anguish and worry.

Our duty as physicians demands that we exert as much expertness in anticipating and preventing unnecessary psychic trauma as in plucking out an offending part.

Ages of Motherhood

"Nearly 80 per cent of women give birth to their first babies between the ages of 15 and 35," *Hygeia, The Health Magazine* states. "Over half of these babies are born to mothers aged 20 to 25. Slightly over two per cent of the first born babies have mothers past the age of 35, and one-third of one per cent have mothers over 40 years of age."

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

A study of tuberculosis among students at Lund University in Sweden by Hedvall and Malmros calls attention to the great risk of tuberculosis confronting young people and describes an excellent procedure for mass surveys of students. Of special interest is the discovery that the high incidence of tuberculosis among medical students was traced to the postmortem examinations during their course in pathology. Abstracts of the study follow:

Incidence of Tuberculosis Among Students

Pulmonary tuberculosis is characterized by an insidious protracted course and a prolonged absence of clinical symptoms. When such symptoms finally appear, the lung changes have frequently spread extensively in one or both lungs. It is essential, therefore, that pulmonary tuberculosis should, if possible, be diagnosed before the appearance of morbid symptoms.

On registration all students are required to come to the Student's Tuberculosis Bureau for an examination. On the first visit a careful history is taken, a tuberculin test by the Pirquet method and a sedimentation test are made, together with a fluoroscopic and radiographic examination. If the tuberculin test is negative, the students are retested by the Mantoux method with from 0.1 up to one mg. tuberculin. Only those who do not react to the one mg. dosage are considered negative.

Examination Procedure

A re-examination of all students is made at least once a year following the same procedure of the original examination, with the exception of the x-ray examination and this is done every third year. However, an x-ray is taken when the previous history, rate of sedimentation or fluoroscopic examination indicates something suspicious or when greater caution is necessary for some other reason. When the tuberculin reaction changes from negative to positive an x-ray is taken every third month during the first year after the primary infection and every six months during the second year, even if no changes have been demonstrated. On the other hand, if any changes are observed they are followed by means of x-rays at intervals of a few weeks or months, irrespective of expense.

Altogether 3,336 persons were examined; 638 were medical students, 1,367 philosophy students, 409 theology students, 488 law students. To these

were added 434 probationary nurses at the South Sweden School for Nurses. They were included in order to obtain a comparison with the medical students since both these groups are undoubtedly exposed to a certain risk of tuberculous infection.

Results of Survey

Among those examined, 133, or approximately four per cent, were found to have active tuberculosis. Of the 133 cases, (a) 47 were tuberculin-negative and had normal lung x-rays when entering the University or School for Nurses; (b) 43 had been infected at some period of their lives, since they were tuberculin-positive on first examination but were radiologically sound and (c) the remaining 43 were tuberculin-positive and did not show a normal x-ray picture of the lungs on first examination. Some of these already had tuberculosis but others did not develop it until later.

In general, the tuberculous changes were progressive and significant. Of the 47 who showed no evidence of tuberculosis on entrance, there developed 14 cases of pulmonary tuberculosis as well as cases of erythema nodosum, exudative pleurisy, tuberculous peritonitis, and miliary tuberculosis, with two deaths.

Of the 43 in the second group who were tuberculin-positive but radiologically sound on first examination, 37 developed pulmonary tuberculosis, two tuberculosis of the hilar lymph nodes, and four pleurisy. One of the cases of pleurisy developed pulmonary tuberculosis as a complication and died.

Of the 133 cases of tuberculosis found in the period from 1930 to the end of the 1937 spring term, 110 were among the university students and 23 among the nurses. Ninety-five students and 15 nurses are at present fit for work. Of the other cases, nine have died, five are unfit for work and nine are still at the sanatorium.

It is of interest, however, not only to know the number of cases found and how they developed, but also the frequency of the disease in the different groups, as shown in the table:

	No. of Persons Examined	No. of Cases of Tuberc. Found	Percentage
Medical students..	638	72	11.3
Philosophy students.	1,367	17	1.2
Theology students.	409	12	2.9
Law students.....	488	9	1.8
Nurses	434	23	5.3

These figures indicate that both medical students and probationary nurses are exposed to a considerable risk of tuberculous infection.

During the first year, no case of tuberculosis was found among the medical students. In the second year four cases were detected and during the third to fifth year 10 cases each year. From the sixth to the ninth year only, six, four, two and one cases respectively were diagnosed. Thus, most of the tuberculous cases were discovered during the third to fifth year of study, a period which coincides with the last course before and the first courses after the beginning of the practical training at the hospital. Since the medical students live under practically the same conditions as other students at the university, the high tuberculosis morbidity among them must be due to a risk of infection to which they alone are exposed.

Medical Student Incidence Studied

Quite a number of the medical students are primarily infected before they begin their hospital training course and, therefore, some course taken before this training must be significant. The medical students themselves have for a long time suspected that the course in general pathology taken before the hospital duty, and lasting one year, constitutes a danger of tuberculous infection. In at least 16 cases, there is a significant connection between the course of general pathology and the appearance of the primary infection. In the other cases the primary infection occurred either before or after the pathological course, during the training at the hospital.

This infection acquired during the course in pathology may have originated from fellow students or physicians. The probability of this happening was, however, carefully excluded. For this reason, thorough and repeated examinations of the autopsy rooms were made for the presence of tubercle bacilli. Samples were taken from towels, trays, dust on the autopsy tables and in the rooms and it was found that in spite of all precautions during the postmortem examinations, tubercle bacilli were discovered when an examination was made 24 hours after a necropsy examination of a person with pulmonary tuberculosis. In addition to guinea pig inoculations, suitable cultural experiments were made to obtain a quantitative idea of the presence of tubercle bacilli on the objects and in the rooms examined.

The Incidence of Tuberculosis Among Students at Lund University, Erik Hedvall, M.D., Amer. Rev. of Tuber., Vol. XLI, No. 6, June, 1940.

President's Page

This is my last official message to you as president of your Association. I desire to express to you my deep appreciation for the sympathetic understanding and support which you have given me during my term and to wish my successor, Dr. Robert King Buford of Charleston, a prosperous and successful administration. By virtue of long training and experience on the Council and on various Association committees, Dr. Buford is ideally suited to lead the Association through a great year in 1941.

The presidency of the West Virginia State Medical Association has been an education to me, as I am sure it has been to most of my predecessors. During this past year nothing has impressed me more than the continued necessity for strong and forceful component county medical society action. Where such societies exist, the doctors practice together in a spirit of harmony and cooperation, devoting most of their time to the advancement of medicine as a science. On the other hand where our county societies are weak from inertia or lack of proper leadership, we often find an unhappy profession, "hamstrung" with disunion over petty economic problems. Our State Association can never be stronger than its county societies. It strikes me that one of our Association goals should be to develop county society leadership in every way possible.

The Council met in November and many matters of vital importance to the profession were discussed. Most of these things will be brought before the annual conference of County Medical Society Presidents and Secretaries which will be held in January. During the month of December, most of our county societies will elect new officers for 1941. My closing message to the profession of the state is to urge all of our county societies to select the most outstanding men to lead them in 1941 and to make sure these men will attend the Presidents' and Secretaries' Conference next month. One of my most pleasant duties of the past year was that of visiting so many of our county medical societies over the state. These visits gave me an opportunity to better acquaint myself with the doctors of West Virginia; an opportunity for which I shall be forever grateful.

Although this is my last official message to you, it does not mean that my modest efforts for the medical profession are ended. Whenever and wherever I am needed, I shall always consider it a privilege to continue to serve the great cause of organized medicine in West Virginia.

Frank V. Langfitt

President.

West Virginia Medical Journal

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"PREPAREDNESS QUESTIONNAIRES"

The last report published in the *Journal of the American Medical Association* showed West Virginia trailing the Fifth Army Corps Area in the percentage of medical preparedness questionnaires returned by physicians. The West Virginia percentage was listed at 61 per cent, with Indiana, Ohio and Kentucky all ahead of this figure. While we do not know the present percentages of these three fine states, and while we have no desire to stir up a contest, we do point with pride to the fact that more than 90 per cent of our West Virginia doctors have now reported.

At the Southern Medical Association meeting in Louisville on November 13, Dr. A. T. McCormick, Kentucky health commissioner, secretary of the Kentucky State Medical Association and president of the Southern Medical Association, announced more than 98½ per cent of the doctors in the blue grass state had filled out and returned their questionnaires. With our West Virginia returns still trickling in, we are unable to announce our exact percentage but we are fairly certain we can beat Kentucky if they are unable to improve the figure announced by Dr. McCormick.

The last response to the letters sent out by Dr. B. H. Swint was unusually good. Replies came in direct to the Association headquarters and we were able to keep our own records. All questionnaires returned to the Association have been recorded and forwarded on to the American Medical Association. Some errors have been made, for which apologies are hereby extended. Between the time that the Association received the "delinquent" list from the A. M. A., and the time that Dr. Swint's letters were released, many doctors completed and returned their questionnaires to the Chicago office. All of these physicians received two questionnaires.

We did not attempt to keep a complete record of all the replies and comments that were turned over to us by Dr. Swint. However, here are a few excerpts that are typical and therefore probably worth repeating:

"I walk with a cane, but can use it if necessary."

"This is my third application. I hope this one takes."

"I am past 85 years of age and do not care for any position in the army or navy."

"Am 73 years of age but in fine health. Do not recall having seen a blank before—it may have been and probably was opened and discarded as are many printed papers that come to a doctor's office."

"I am now past 92 years and my age will not permit me to do much."

"Not able to go . . . nearly broken down."

"Have one child and am pregnant. Will return your questionnaire next March."

THE SIMON CASE

On November 11, 1940, the circuit court of Mingo county upheld the Public Health Council of West Virginia in revoking the license of Dr. S. M. E. Simon of Williamson. The court affirmed and sustained the revocation order entered by the Public Health Council on March 4, 1940, on all counts, and ordered Simon to pay all costs incurred in connection with the appeal. Judgment was suspended for a period of 60 days within which to enable Simon to appeal to the state supreme court.

The ruling of the Mingo circuit court is a marked victory for the Public Health Council

of West Virginia. Unless set aside by the supreme court, it stands as a barrier against quackery and charlatanism in this state. Backed up by the Simon decision, we feel that the Public Health Council will have a more free hand in guiding medical practice in West Virginia to its highest possible level.

Without reviewing the various incidents and charges presented in the Simon hearing, we do wish to point out that it was hard fought at every turn. Simon was represented by outstanding legal talent. An assistant attorney general of the state advised with the Public Health Council throughout the original hearing in July, 1939. Attorneys representing the State Association and the Mingo County Medical Society conducted the prosecution. After three days of testimony, weeks were required to make up the record of approximately 1,000 pages. It was not until March, 1940, that the Public Health Council was ready with its verdict. Simon's appeal to the Mingo circuit court was contested just as aggressively as the action before the Council.

If there was ever any question in the minds of the members of the Public Health Council as to how far they could go in upholding the honor of the medical profession, that question should now be dispelled. We congratulate the Council on the fair and unruffled manner in which the Simon case was handled. If future cases are treated as fairly and as fearlessly as that of Simon, the future of ethical medical practice in West Virginia is assured.

"THIRD PARTY" INTERFERENCE

In mid-November the West Virginia Conference of Social Workers met in Charleston. Included in this group are the various county directors of public assistance. During the conference, a special meeting of the county directors was called to discuss problems pertaining to medical relief. A second discussion with Association officials is scheduled for next month.

We can say here and now that the most important present problem confronting the profession and the county directors is that of "third party interference" between patient and physician. Strange as it seems, this third party relationship is being promoted by many of our doctors. A typical example is that of the relief client who calls his doctor for medical aid and is told to get a requisition from his county director. This places the county director in a much more important medical rôle than he or she should carry. This empowers the county director to make a mental diagnosis, determine whether the case is or is not an emergency, and to withhold or bestow medical aid according to his own judgment or caprice.

It is not difficult to understand why a physician might desire a requisition or authorization before rendering medical service to a relief client. It has happened in some counties all too often in the past that no pay is forthcoming to the doctor who has no advance authorization. Many county councils and county directors are prone to dodge obligations to which they are not directly committed. Doctors know this, and ask for an advance commitment.

We could sit around and argue all day about who is right and who is wrong on this matter of advance authorizations, and wind up right back where we started. In doing so, we are losing sight of something vastly more important. That something is the patient himself. The patient is the only thing that justifies the existence of the physician. If we are to control our own destiny, we must assume responsibility for the patient. If we turn the patient back to some third party we place this responsibility in other hands.

For centuries past the poor have looked to the medical profession for aid in case of sickness. We have just about arrived at that point where we must decide whether we want to keep these folks or turn them over to the welfare workers. The poor man who has a sick wife or baby is not interested in side issues; he wants a doctor. Even the most ignorant relief client knows in a vague way

that pneumococcus germs, for example, will not stand around idle waiting for some doctor to finish an authorization argument with the relief office.

The only reason our major attack in this editorial is not directed toward uncooperative county relief directors is because our major interest is in the medical profession. If county directors want to be churlish, that is bad; but that is no reason for our physicians to play the same rôle.

Prompt medical service should be available under ordinary circumstances at all times. One way to provide prompt medical service to the indigent is to employ salaried doctors to take care of them. If we do not want salaried doctors, we must provide prompt medical service ourselves within reasonable limits. If we do provide prompt and adequate service to the state's relief clients, and if county directors or county councils refuse legitimate payment, we can then fight this thing out with the right on our side.

Building Hospitals

"The impression prevails and in certain circles is widely promoted that hospital construction has halted during the depression," *The Journal of the American Medical Association* for November 16 says. "True, many of the sources from which income for hospital building is drawn in prosperous times have lessened their flow. However, the WPA in a 'Report of Work Completed, 1935-1940' relates that during this period 132 new hospitals have been constructed, 1,592 have been reconstructed or improved and additions have been made to 222. Up to June, 1939, the PWA in its report 'America Builds,' page 143, states that 'PWA has provided 121,760 beds in hospitals costing $367,659,880.' The technical committee which reported to the National Health Conference, and from which report much of the impression has proceeded, estimated that a normal increase in hospital beds should be 25,000 a year. Since the PWA alone provided 121,760 beds in five years, it should be evident that the alarm of the National Health Conference with regard to hosptial construction is somewhat lacking in justification."

Obituaries

Doctor J. A. Moyers

Dr. Jasper A. Moyers, well known Pendleton county physician, died at his home in Franklin on September first at the age of 68 years. He was born in 1872 at Dovesville, Rockingham county, Virginia. After teaching school for several years he received his medical degree from the St. Louis College of Physicians and Surgeons in 1899 and was granted his West Virginia license the same year.

After his graduation, Dr. Moyers located at Brandywine in Pendleton county and later moved to Franklin where he enjoyed a large general practice. He was a member of the Potomac Valley Medical Society.

Doctor Charles B. Williams

Dr. Charles B. Williams, prominent Philippi physician and former president of the Barbour-Randolph-Tucker Medical Society, died at his home on September 9 at the age of 68 years. He had been in ill health for several months, retiring from active practice early in 1940.

Dr. Williams was born in Grafton in 1872, received his academic education from Augusta Military School and was graduated in medicine from the University of Virginia in 1895. He received his West Virginia license the same year, practiced for two years at Berryburg, and then located in Philippi. He later took postgraduate work in New York and Baltimore. He served as a captain in the army medical corps during the World War.

The deceased served as county health officer and as surgeon for the Baltimore and Ohio railroad. He was prominent in Masonic circles. He was president of the First National Bank of Philippi until his resignation in February because of ill health. Surviving are his widow, one son and two grandchildren.

The examination of familial contacts of tuberculin-positive children between the ages of six months and six years, may be a valuable case-finding procedure, since the opportunity for tuberculous infection among very young children is limited to the immediate family circle.—Paul Phelps, M. D., et al, *Jour. Pediatrics*, October, 1940.

General News

Revocation Sustained

The appeal of Dr. Szin Mose Eisen Simon of Williamson to set aside the revocation of his license to practice medicine by the Public Health Council was denied by Judge Charles W. Ferguson of the Mingo county circuit court on November 11, 1940. The force and effect of the decision stands suspended for 60 days to enable Simon to appeal to the state supreme court. The revocation of Simon's license was announced by the Council on March 4, some months after charges of malpractice were heard at the Bluefield meeting.

Simon's appeal was submitted to Judge Ferguson last July 11 on briefs and the record of the Bluefield hearing. Since the filing of his appeal, Dr. Simon was charged in a seven count indictment, presented by a federal grand jury in Huntington, with violating the national bankruptcy act. He was released on bond pending trial in December.

Judge Ferguson's decision on the Simon appeal case said in part, "that the decision made and entered by the Public Health Council on March 4, 1940, revoking and annuling the license heretofore granted to respondent, Dr. Szin Mose Eisen Simon, being certificate No. 5739, be and the said decision and order are hereby in all respects affirmed and sustained." The decision also requires that Simon pay the costs of the appeal.

At press time Simon had not filed an appeal to the state supreme court. However, on November 12, one day after Judge Ferguson's decision, an advertisement appeared in the *Williamson Daily News* reading as follows:

"Notice! I am *practicing* medicine and surgery in my offices *in the Mercy Hospital.* Regardless of what I believe to be persecution and prosecution, nothing can stop *the existence of the Mercy Hospital which is built permanently on rocks.* The hospital is equipped to give better service than any other institution in Williamson.

"(Signed) S. M. E. Simon,
"S. M. E. Simon, M. D.
"President, Mercy Hospital, Inc."

New Doctors Licensed

Fourteen physicians were licensed by reciprocity to practice medicine in West Virginia at the October meeting in Morgantown of the Public Health Council. All certificates were dated November 4, 1940 with certificate numbers running from 6410 to 6423, inclusive. The names, addresses and schools of the new licentiates are as follows:

Dr. Evelyn M. Ball, 1308 Adams Avenue, Huntington, Medical College of Virginia; Dr. J. M. Collins, Peacock Park, Fairmont, George Washington University; Dr. M. A. Davidoff, Paw Paw, West Virginia, Rush Medical College; Dr. H. J. Hancock, Stevens Clinic Hospital, Welch, Medical College of Virginia; Dr. F. C. Long, Jr., Pt. Pleasant, West Virginia, Ohio State University; Dr. T. R. Mattocks, 408 Ruffner Court, Charleston, Duke University; Dr. Edward G. McGavran, West Virginia Public Health Training Center, Morgantown, Harvard Medical School; Dr. J. M. Miller, Hotel Harding, Marion, Ohio, College of Physicians and Surgeons, N. Y.; Dr. T. H. Millman, 109 Granville Avenue, Beckley, University of Wisconsin; Dr. Edward L. Moore, Crucible, Pa., intended West Virginia residence, Fairmont, St. Louis University; Dr. C. W. Powell, 101 Hunt Avenue, Charleston, University of Arkansas; Dr. W. A. Reishtein, Elkins, West Virginia, Hahnemann Medical College; Dr. Maurice J. Small, Parsons, West Virginia, University of Maryland; Dr. Frank J. Zsoldos, Glen Rogers, West Virginia, Boston University.

Council Meeting

The fall meeting of the Council of the West Virginia State Medical Association was held at the Association headquarters in Charleston on November 7, 1940. Those present were Drs. R. M. Bobbitt, chairman; F. V. Langfitt, president; T. M. Barber, treasurer; J. C. Peck, A. P. Butt, C. B. Pride, B. S. Brake, L. S. Deeds, Welch England, Raymond Sloan, R. K. Buford, president-elect; Walter E. Vest, JOURNAL editor; J. B. Clinton, C. O. Post, James L. Wade, A. E. Amick and Mr. Joe W. Savage, executive secretary.

Association membership was reported at approximately 1,300 with only 16 delinquents. Indications point to a very successful financial year for the Association and for the WEST VIRGINIA MEDICAL JOURNAL.

Dr. Edward J. Van Liere, Dean of the School of Medicine, West Virginia University, Morgantown, was elected a member of the Publication Committee of the WEST VIRGINIA MEDICAL

JOURNAL to succeed Dr. J. H. Anderson of Hemphill.

It was announced that Mr. Ben Moore, Association attorney, had been elected judge of the Kanawha County Common Pleas Court and that his services would no longer be available after January first. Mr. H. L. Snyder, Jr., Charleston, was named by the Council to succeed Mr. Moore as Association attorney.

The Council voted to maintain gratuitous membership for Association members who are called away to military or naval duty during the period of the present emergency, as long as they remain on active duty.

Dr. W. D. Hereford, Huntington, was elected to honorary membership in the Association. Dr. G. C. Schoolfield, Charleston, and Dr. L. L. Aultz, Omar, were nominated for affiliate fellowship in the American Medical Association.

Dr. Thomas W. Nale of the State Health Department was presented and explained the basis of a proposed hospital licensing law for West Virginia. He said the proposed measure had been endorsed by the Public Health Council of West Virginia. The Council approved the principle of hospital licensing legislation and requested that a copy of the proposed legislation be worked out and placed in their hands prior to their January meeting.

An afternoon meeting of the Council was held at the Daniel Boone Hotel and was given over to a free discussion of various problems relating to list practice and other forms of medical, surgical and hospital insurance.

Southern Medical Meeting

Approximately 2,500 physicians attended the thirty-fourth annual session of the Southern Medical Association at Louisville on November 12-15, 1940. Dr. Paul H. Ringer, Asheville, North Carolina, was elected president and Dr. M. Pinson Neal, Columbia, Missouri, president-elect. Vice presidents are Dr. E. Lee Heflin, Louisville, and Dr. James R. Bloss, Huntington, West Virginia. Mr. C. P. Loranz was re-elected secretary-manager and St. Louis was selected as the site for the 1941 meeting.

West Virginia doctors in attendance at the Louisville session were:

Drs. R. L. Anderson, Charleston; Harry E. Baldock, Charleston; J. F. Barker, Huntington; James R. Bloss, Huntington; Holmes Blair, Parkersburg; Ray M. Bobbitt, Huntington; Robert C. Bock, Charleston (Louisville City Hospital); John J. Brandabur, Huntington; Robert King Buford, Charleston; Clinton B. Chandler, Iaeger; Charles B. Chapman, Welch; James W. Frazier, Charleston; C. C. Fenton, Morgantown; John R. Godbey, Charleston; J. A. Guthrie, Huntington.

Drs. John B. Haley, Charleston; Orda M. Harper, Clendenin; Wm. D. Hereford, Huntington; O. P. Hodge, Matewan; W. E. Hoffman, Charleston; Harold H. Howell, Madison; Charles A. Hoffman, Huntington; V. E. Holcombe, Charleston; George D. Johnson, Spencer; W. Carl Kappes, Huntington; George M. Lyon, Huntington; W. K. Mackey, Huntington; J. Hallock Moore, Huntington; T. W. Moore, Huntington; Wm. Thos. McClennan, Ethel; Leonard E. Neal, Clarksburg; Newman H. Newhouse, Charleston.

Drs. Berlin B. Nicholson, Parkersburg; J. E. Offner, Weston; Wellington H. Parker, Braeholm; Albert M. Price, Charleston; Edward F. Reaser, Huntington; Dorsey M. Ryan, Hinton; A. D. Terrell, Lewisburg; W. A. Thornhill, Charleston; Pat A. Tuckwiller, Charleston; Thomas J. Sasser, Huntington; Mr. Joe W. Savage, Charleston; H. V. Thomas, Clarksburg; John P. Trach, Fairmont; Walter E. Vest, Huntington; James L. Wade, Parkersburg; Frederick H. Watherway, Grantsville; Robert S. White, West Union; R. J. Wilkinson, Huntington.

Sulfanilamide for Endocarditis

Prolonged treatment with sulfanilamide cured a case of acute ulcerative endocarditis, a usually fatal heart disease, Samuel Alexander, M.D., and Stewart F. Alexander, M.D., Park Ridge, N. J., report in *The Journal of the American Medical Association* for November 16.

The disease consists of inflammation of the membrane lining the heart and results in ulceration of the valves of the heart. In this case it was due to infection with a streptococcic organism capable of destroying red blood cells.

The cure is attributed by the authors to the fact that treatment was instituted early in the disease, perhaps before deep bacterial invasion had taken place, and that the drug was given for six weeks. There seems little doubt that moderate dosage, long instituted, is more effective for deep seated infections than massive doses for a shorter period of time, they say.

County Society News

Cabell County

The regular monthly meeting of the Cabell County Medical Society was held at the Hotel Pritchard, Huntington, on the evening of November 14. The program consisted of a sound film by the American Academy of Pediatrics exhibited through the courtesy of Mead Johnson and Company, entitled "When Bobby Goes to School."

A paper was read by Dr. Richard Stevens entitled "Vitamin K, and Its Use in Prevention and Treatment of Hemorrhage."

Dr. Jack Graham Webb, interne, Louisville City Hospital, and Miss Frances Skelton, R. N., assistant superintendent, C. and O. Hospital, Huntington, were married in Louisville, Kentucky, on September 21, 1940.

J. L. HUTCHINSON, *Secretary*.

Central West Virginia

The Central West Virginia Medical Society held its regular quarterly meeting at the Tennerton M. E. church, near Buckhannon, on the evening of October 17 with Dr. J. M. Cofer, vice president, presiding. Immediately following dinner, Mr. N. W. Taylor, field agent for the United States Farm Security Administration, outlined to the members the proposed farm tenant program for the counties comprising our society and the physical examination required by each farmer.

Dr. H. R. Sauder of Wheeling was the guest speaker and gave a splendid talk on heart irregularities and the use of digitalis in the treatment of these irregularities. It was the desire of the society that this paper be presented to the WEST VIRGINIA MEDICAL JOURNAL for publication.

New officers elected for the coming year are Dr. J. M. Cofer, Bergoo, president; Dr. H. O. Van Tromp, French Creek, vice president, and Dr. A. B. Bowyer, Elk View, secretary-treasurer. Dr. M. T. Morrison and Dr. J. C. Huffman were elected delegates to the state meeting, with Dr. E. L. Fisher and Dr. J. A. Rusmisell as alternates. The society's legislative committee is composed of Dr. James McClung, Dr. J. B. Dodrill, Dr. B. L. Page, Dr. M. T. Morrison, and the president and secretary.

The next meeting of the society will be held at Gassaway in January with Dr. E. L. Fisher, Dr. J. C. Eakle and Dr. C. C. Carson in charge of arrangements.

A. B. BOWYER, *Secretary*.

Fayette County

At the November 26 meeting of the Fayette County Medical Society, Dr. William K. Keller, Assistant Professor of Psychiatry, University of Louisville Medical School, spoke on the "Menopause; Diganosis and Treatment." The meeting was held at Fayetteville, at eight o'clock p. m.

The next meeting will be held on Tuesday, December 17. Dr. Russell L. Haden of the Cleveland Clinic will speak on the subject of "Arthritis." The election of officers for 1941 will be held at the December meeting.

GILBERT A. DANIEL, *Secretary*.

Kanawha Medical Society

A highly successful combined meeting of the Kanawha Medical Society with the West Virginia Heart Association and the Heart Council of Greater Cincinnati was held at the Daniel Boone Hotel, Charleston, on the afternoon and evening of October 29. The program was opened at two o'clock with presentation of cases by Charleston physicians and discussion by Dr. Julian Benjamin of Cincinnati.

At 3:30 o'clock Dr. Harry Landt of Cincinnati presented an interesting and beneficial paper on "The Cardiac Arrhythmias, Their Diagnosis and Treatment." This was followed by a subscription dinner and then Dr. William Dressler of New York City gave a paper on "The Treatment of Cardiac Emergencies." While this was a splendid meeting, it was unfortunate that Mr. Wendell Willkie was speaking in Charleston on the same evening.

The December meeting will be held at the Daniel Boone Hotel on December 10, at which time the annual election of officers will take place. The guest speaker on this occasion will be Dr. William Henry Craddock of Cincinnati who will talk on "Nose and Throat Allergy."

A son, William A., III, was born on September 9, 1940, to Dr. and Mrs. William A. Thornhill, Jr., of Charleston.

WILLIAM A. THORNHILL, *Secretary*.

Logan County

The Logan County Medical Society held its regular meeting at the Aracoma Hotel, Logan, on

Wednesday evening, November 6, at eight o'clock. Dr. Randolph Anderson of Charleston talked on "The Diagnosis and Treatment of Acute Osteomyelitis."

The society went on record as approving and recommending the hospital and medical service plan of the Pennsylvania Casualty Company as being sold in Logan county.

J. W. CARNEY, *Secretary.*

Monongalia County

The regular monthly meeting of the Monongalia County Medical Society was held at the Hotel Morgan, Morgantown, on the evening of November 12. Dinner was served, following which the scientific program was presented. The guest speaker of the evening was Dr. W. L. Mullens, Professor of Medicine, University of Pittsburgh Medical School, Pittsburgh, Pa., who gave a highly interesting presentation on "Newer Concepts of Coronary Disease."

CARL E. JOHNSON, *Secretary.*

Ohio County

Dr. George Crile, Jr., of Cleveland, was the guest speaker for the regular meeting on November 8, 1940. He gave a very clear presentation of the diagnosis and treatment of surgical lesions of the stomach.

The society was honored by the presence of members of the West Virginia section of the Southeastern Surgical Congress which had been in session during the afternoon.

Dr. Leonard Eskey of Wheeling celebrated his ninetieth birthday on November 15.

HAROLD G. LITTLE, *Secretary.*

Skin Cancer

There is no justification for recommending the deliberate production of curable cancer of the skin as a means of protection against development of cancer elsewhere, Shields Warren, M.D., and Olive Gates, M.D., Boston, declare in *The Journal of the American Medical Association* for Nov. 16.

Cancer of the skin is less serious than cancer of other organs. Thus a previous paper which reported a lesser incidence of internal cancer in persons with cancer of the skin than in the general population suggested that this type of the disease might exert a beneficial effect in preventing the development of more serious forms.

BOOK REVIEWS

Medical Nursing

"Medical Nursing", by Edgar Hull, M. D., F. A. C. P., Christine Wright, R. N., B. S., and Ann B. Eyl, B. S. Publishers, F. A. Davis Company, Philadelphia, Pa.

"Medical Nursing" by Hall, Wright and Eyl is a compendious correlation of the major subjects of the nursing curriculum, including within the covers of one volume material otherwise treated as individual units during the first two years of training. During the preliminary study of medicine, surgery, anatomy, and pediatrics the subjects are approached from the standpoint of studying how the body with its nine systems is constructed and what may happen to it as pertains to the particular branch of medicine under consideration. In this text, on the other hand, each of the physiological systems is treated in relation to the composite whole. Discussion of each system constitutes a chapter, and all divisions (medicine, surgery, etc.) are considered as related material.

The succinct manner in which the text is presented makes it excellent for use by third year students, and it is the reviewer's belief that to introduce into our curriculum a third year class in which this book is used would bring together the numerous isolated facts and experiences of the young nurse's early training. The subject matter is treated in outline and is most appropriate for the extent of the students' knowledge at that time. The detailed discussion given in the more elaborate text-books of their preceding classes followed by this outlined study would be excellent basic knowledge around which the advanced student, through her own ingenuity would assemble details learned principally from practice and experience. Following each chapter is a list of "Correlated References" from which the student may fill in the outline. These references include such material as is offered by the various editions of the *American Journal of Nursing* and *Hospital Progress,* both being easily accessible to our nurses. Besides these several of the new editions of our various texts are suggested.

Hull, Wright and Eyl are doctor, instructor, and dietitian, respectively, and since each is a specialist in his or her own field we get an unbiased view, showing the equal importance of medical, surgical and dietary treatments. They have accomplished their intention of offering only fundamentals and

presenting them in an interesting and stimulating fashion. The pages are printed in two columns to facilitate scanning. There are many excellent illustrations.

Quite obviously the authors know the value of nurses learning a few basic principles which will be remembered, and which, with a reasonable amount of common sense, can be applied as well as correlated. This is better than filling their minds with details that may be immediately forgotten, not only because there are too many to be retained but also, quite often, there is nothing to which they may connect them. The ingenuity of the individual student is the all-important factor after the subjects have been presented, and if the material is in outline form in their minds experience will fill in and keep them up-to-date. All in all, a little more anatomy preceding the chapters on the various systems and more of a variety as to the publishing companies in the "correlated references" and we should have a text well suited for a teacher's manual and for third year review not only for correlating purposes but in preparation for state board examination. This book, with the principles behind it is one of the most important steps in advancing nursing that we have been given in many months.

—AILEEN KECKLER, B. S., R. N.

Virus and Rickettsial Diseases

"Virus and Rickettsial Diseases", Harvard School of Public Health Symposium Volume; Harvard University Press, Cambridge, Mass., 1940, pp. 907.

A symposium on virus and rickettsial diseases was held at the Harvard School of Public Health in June, 1939. The presentations of the eminent authorities participating have been recorded in the form of 34 separate essays collected and published by the Harvard University Press under the title "Virus and Rickettsial Diseases."

The essays are remarkable because of the thoroughness with which the essayists have considered previous contributions of a relevant nature. All bring the information concerning their particular subject right up to the last minute. The collected essays constitute a valuable book of reference. Where necessary, a suitable relationship is maintained between essays so that needless overlapping and repetition is avoided. The bibliographic references are extensive and in keeping with the quality of the essays. For the naval medical officer this volume has particular interest and importance, because of the special significance of virus diseases (1) among young adults, (2) among troops and (3) in special geographic situations. It should be a part of the library of every medical officer.

The first essay is an introduction to the problems of epidemiology in virus diseases. This is followed by a most interesting and informative discussion of the physical and chemical properties of filtrable viruses by Mueller, and an especially good discussion of the immunology of infections by filtrable virus agents by Zinsser. Then follows a consideration of insects as vectors of virus diseases.

A discussion of the epidemiology of variola is followed by one on the methods of preparation and use of smallpox vaccine, one on generalized vaccinia and one on the neurologic complications of vaccination against smallpox.

The etiology of measles, the prevention and modification of measles and the factors that influence the reporting of measles are in turn discussed. Mumps, dengue fever, and lymphogranuloma inguinale have similar consideration, followed by an unusually informative essay on the absorption of toxic and infectious material from the respiratory tract by Drinker.

Of related interest to one another, are the succeeding discussions on virus diseases of the respiratory tract, of human and swine influenza and of distemper in animals. These will be of particular interest and value to the reader, because of the admirable manner in which the most recent advances in the study of influenza virus behavior is presented.

Psittacosis is considered in such a manner as to emphasize the public health problems involved.

Poliomyelitis is considered in three consecutive essays, the first dealing with etiology, the second with the clinical features and treatment, and the third with a review of preventive measures. Reference is made to the recent work of Paul and Trask in recovering the virus from sewage, and its possible public health significance is implied.

Rabies is discussed as to epidemiology and prophylaxis. Kelser, the essayist, is a particularly forceful writer. In reading this as well as in reading his essay on distemper, the reader is most favorably impressed with the effectiveness of his presentation.

There is one essay on equine encephalomyelitis and one on louping ill by Fothergill, and one on lymphocytic choriomeningitis, by Blackfan. All three essays are excellent resumés of our present state of knowledge in regard to these three relatively recently recognized virus diseases.

Three essays treat of yellow fever. The first is by Sellards on etiology and clinical characteristics the second by Russell on epidemiology, and the third by Gordon on preparation and use of the vaccine. They are the usual excellent presentations one has become accustomed to expect from these eminent authorities.

The rickettsial diseases are treated in the four final essays. Wolbach presents a general survey of the rickettsial diseases and discusses the biologic position of the rickettsiæ. Pinkerton discusses the diagnosis and classification of them, Gordon the clinical features, and Zinsser the epidemiology and immunology thereof. In a brief but clear cut manner, an excellent resumé of the important aspects of rickettsial diseases is presented in these four essays.

In the opinion of the reviewer, who has long maintained a special interest in the problems of viruses and virus diseases, this collection of essays represents one of the most important publications of the past several years, certainly the most important one on virus diseases since the publication of "Filtrable Viruses" by Rivers in 1928. Incidentally, it is of historic interest to note that the somewhat similar collection of essays collected and published by Rivers at that time was the first book on virus diseases to be printed in English.

This publication of the essays of the Harvard symposium can do much to promote among medical men a more workable understanding of the viruses and of the importance of virus diseases. To the civil physician, the importance of the facts presented therein is great. To the medical officer of our armed forces, it has an even more important significance.

—G. M. L.

Nervous Diseases

"Textbook of Nervous Diseases", by Robert Bing, Professor of Neurology, University of Basel, Switzerland, translated and enlarged by Webb Haymaker, Assistant Clinical Professor of Neurology and lecturer in Neuroanatomy, University of California. (From the Fifth German Edition, with 207 illustrations, including nine in color, 838 pages. The C. V. Mosby Company, St. Louis, Mo.)

Three characteristics make this work outstanding: the clarity of its style and composition, the accuracy with which the facts are presented, and the logic used in the interpretation of clinical findings. Bing has elaborated on the latest advances in neurology in Europe, and has brought to the practitioner detailed, precise therapeutics in an applicable form. This English edition of Professor Bing's "Lehrbuch der Nervenkrankheiten", differs from the original in that the material has been considerably rearranged, augmented, and adapted to American and British usage.

Brain and Spinal Cord

"Compendium of Regional Diagnosis in Lesions of the Brain and Spinal Cord", by Robert Bing, translated and edited by Webb Haymaker, Professor of Neurology, University of California. (Eleventh edition, 125 illustrations, 27 in color, 275 page. The C. V. Mosby Company, St. Louis, Mo.)

The numerous new editions and translations which the compendium has passed through have justified its pragmatic approach. It is an especial satisfaction that this work has served not only its original aim of helping the sick, but also that it has made available to a large circle of readers the fundamentals of one of the most fascinating provinces of neurology. This book has remained for thirty years an outstanding authority on the subject.

Psychobiology and Psychiatry

"Psychobiology and Psychiatry", a text-book of normal and abnormal human behavior, by Wendell Muncie, M. D., Associate Professor of Psychiatry, Johns Hopkins University; 727 pages. C. V. Mosby Company, St. Louis, Mo.

A book written out of concrete practice, a free upshot from actual diagnostic and treatment work. Dr. Muncie offers a presentation out of the midst of a heavy burden of practical responsibilities, a clearly written outline of what he has found most helpful and has freely added to a very vital field, owing to the increasingly human spirit of present-day medicine at large.

The book contains the fruits of Dr. Muncie's researches both here and in Europe, where he was sent by the Rockefeller Foundation in 1934-35. The text is aimed primarily for the use of students and has been stripped of much detail. The material is covered mostly in the obligatory and elective courses in psychobiology and psychiatry at the Johns Hopkins Medical School.

The War Gases

"The War Gases", by Doctor Mario Sartori; a translation from the second enlarged Italian edition by L. W. Marrison, B. Sc., A. I. C. New York, and D. Van Nostrand Co., Inc., 1939, pp. 360. Preface by Prof. G. Bargellini of Rome University.

The author states in the introduction that he has prepared this work "in the hope of satisfying requests for a book which should contain all the purely chemical data at present published in the various manuals of chemical warfare in fragmentary or summary form." The original Italian text is the one outstanding work on chemical warfare in that language. It is fortunate for English reading scientists that it has been translated for them. True to his original intention, the author has gleaned from the significant publications on the chemistry of war gases from all available sources and from all languages. The amazing frequency with which German and Russian investigators are quoted is direct evidence of the progressive attention paid by the chemists of these countries to the matter of war gases during that apparently peaceful era between 1920 and 1935. The second edition brings this work almost up to the very present. Nothing new is presented and the value of the book is mainly in presenting the attitude of a leading Italian authority and his leaning to the German and Russian workers.

There are two major divisions, Part I and Part II. The first chapter is devoted to the principal properties of war gases. These are discussed in an orthodox manner. There is a section on the physiopathologic properties of war gases, then one on the physical properties, and finally one on their chemical properties.

Chapter II is devoted to a discussion of the relation of the chemical structure of the agent to its aggressive action. Although the author presents some of the theories that have been proposed in regard to the relationship of chemical structure to physiologic or pathologic effect, he also indicates the limitations and exceptions thereto. Of the many such theories which have been proposed, the author without necessarily subscribing to either theory, presents briefly the one proposed by the German chemist, Myer, and the Toxophor-Auxotox theory proposed by the Russian chemist, Nekrassov. In a brief discussion of each, the essential features are presented. In Myer's theory, the physiopathologic action of war gases is attributed to certain atoms of radicles which have a tendency to react easily with other substances by addition. The ease of reaction is determined by their combination with the various biological entities or tissues (as the blood, the nerve cells, the respiratory epithelia), which undergo specific and characteristic alterations.

In the Toxophor-Auxotox theory as proposed by Nekrassov, an attempt is made to apply the principles of toxophors and auxotoxes as first elaborated by Ehrlich, to the war gases just as was done in Witt's theory regarding color of organic substances. The author points out that this theory, like that of Meyer though having many interesting aspects, does not sufficiently explain the behavior of some of the war gases. He does intimate, however, that eventually it may be possible to enunciate general and precise laws on relation between constitution and the aggressive action of war gases.

There is a discussion of the halogen atoms and their effect, and in turn, that of the sulphur atom, the arsenic atom, the nitro group, and the -CN group. There is a brief discussion of the possible influence of molecular structure, particularly as to the matter of unsaturated bonds and as to symmetry.

In Chapter III the author discusses briefly various methods of classifying the war gases, and points out the difficulty of classifying these agents on the basis of physical properties alone. The classification based on tactical use is entirely inadequate. He speaks of non-persistent gases, and persistent gases; although he refers to attempts to improve this by introducing an intermediate class, "semi-persistent gases." Besides this classification, he described one essentially the same as that originally used by the Germans during the war of 1914-18, and which still possesses much merit from the standpoint of practicability. In this classification, green cross gases included substances with high vapor tension and a great toxic power on the respiratory tract, and included such agents as phosgene, diphosgene, and chloropicrin. The yellow cross gases included substances with a low vapor tension and high toxic and vesicatory power such as mustard gas and Lewisite, (which they did not have at that time). The blue cross gases were not gases, but were solid substances with low volatility and great irritant power, such as diphenyl chlorarsine and diphenyl cyanarsine. White cross gases included the powerful lachrymators, bromacetone and chloracetophenone.

As to physiopathologic properties, he classifies them much as they are classified by others, (1) lung irritants, (2) vesicants, (3) irritants and (4)

toxic gases. This classification is not as suitable as that currently in use in the American literature.

As to classification on a chemical basis, the difficulties of finding a suitable classification are pointed out, and the classification of Jankovsky, proposed by him in 1925, and that of Engel proposed in 1928 and revised in 1935, are given. The latter classification is, indeed, an important one from the standpoint of the investigator in the chemicals of war. It is probably the most satisfactory from the standpoint of indicating wherein new chemical agents may be found or modifications of present chemical entities may be developed. In this classification, there are eight groups arranged according to their differing oxygen content: (1) hydrocarbons, (2) alcohols, (3) ethers, (4) aldehydes and ketones, (5) acids, (6) esters, (7) amines and (8) arsines. Each of these groups of substances may then be divided into four series. The first of these comprise the aliphatic compounds derived from methane (series I), ethane (series II) and propane (series III). The fourth series comprise the aromatic compounds derived from benzene and its homologues. Engel's classification suggests definite possibilities.

Part II is devoted to a very technical discussion of all the war gases known to be of importance at the moment. Some have, perhaps, little direct value. It is of too technical a nature to permit of detailed review. However, in general each agent is introduced by giving something of its history, its place in industry, if any, its importance as a war agent, and then a discussion of its physical and chemical properties and its relation to other agents and the methods of its preparation. Perhaps one of the most interesting features is the treatment therein of many gases not considered to be of importance in this country.

The author in a rather usual manner describes the properties of these agents, and where possible, methods of detection and identification are discussed. This latter is of importance to the American investigator, because it indicates their attitude with regard to identification and analysis of agents. There are no special contributions however. Methods for analysis and identification are found for most of the important chemical agents discussed.

It is the belief of the reviewer that this volume represents an important contribution to the literature on war chemicals, because it reflects the thought of a leading Italian authority. It will be of more value to the investigating chemist than to the toxicologist, although both should be familiar with it. The frequency with which the author has turned to German and Russian literature indicates indirectly how actively these investigators have been pursuing their studies of war chemicals. One is astonished at the number of references made to relatively recent publications on the part of these investigators. The implications are evidence that not only German and Russian scientists, but Italian as well, are regarding the problems of war chemicals as of real importance.

—G. M. L.

TWENTY-FIVE YEARS AGO

From the December, 1915, Journal

Original articles were by Dr. Aaron Arkin, Morgantown; Dr. S. S. Gale, Roanoke, Va.; Dr. Charles Wingerter, Wheeling; Dr. Wm. W. Golden, Elkins, and Dr. Irvin Hardy, Morgantown.

* * * *

Editorial—In six months, the JOURNAL will have completed its tenth year of publication. As a change in the editorial control is about to occur, a little history seems appropriate. President T. L. Barber, in 1904, recommended the publication by our Association of a state medical journal. This recommendation was referred to a committee of three members, but an adverse report was made in the belief that the membership was too small to justify such a publication. Dr. Golden renewed the recommendation in 1906, but the committee also reported adversely. However, in the House of Delegates, the recommendation was carried by an almost unanimous vote. The committee on publication resolved to issue the JOURNAL for the first year as a bi-monthly, and the first number appeared as a thirty-two page octavo early in August, 1906. To the surprise of all, the JOURNAL netted a profit of about $175.00 for the first year. From July, 1907, until the present time, the WEST VIRGINIA MEDICAL JOURNAL has made its monthly appearances as a thirty-six page, two column journal. * * *

We can not close without commending to the Association our successor, Dr. James R. Bloss, who for years has been one of our most active members. * * * The retiring editor shall continue to have a deep interest in the JOURNAL and the Association by whose command it was started on its course.

—S. L. J.

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Woman's Auxiliary

Fayette County

The Woman's Auxiliary to the Fayette County Medical Society met on October 3 at the home of Mrs. George Fordham at Powellton. Mrs. Fordham, president, called the meeting to order and 10 members and nine guests were present. It was a social meeting with a one o'clock luncheon followed by bridge. During the afternoon, Mrs. Robert Price of Charleston reported on the transactions of the Auxiliary at the state meeting last summer. The November meeting was held on November 19 at the home of Mrs. H. F. Troutman of Page.

MRS. R. A. UPDIKE, *Publicity Chairman.*

Harrison County

The Harrison County Auxiliary met on October 3 at the Gore Hotel, Clarksburg. Mrs. James G. Ralston, president, presided over the meeting. There were twenty-five members present to hear the report of the annual meeting of the Woman's Auxiliary to the State Association, at White Sulphur Springs last July. Mrs. John F. McCuskey read an address by our national president, Mrs. V. E. Holcombe.

Plans were completed for a tea to be given by the Auxiliary on October 18 at the Gore Hotel, for the state nurses convention, held in Clarksburg on October 17-19.

MRS. J. FRANK WILLIAMS, JR., *Secretary.*

Kanawha County

Mrs. T. G. Reed entertained members of the Woman's Auxiliary to the Kanawha Medical Society on Tuesday evening, November 12, at her home on Loudon Heights. After a short business session, tables were arranged for bridge. Assistant hostesses were the Mesdames J. E. Rucker, Francis Clark, R. L. Anderson, W. F. Work, Thomas W. Nale, M. L. Bonar, E. L. Shamblen, R. R. Louft, R. E. Pence and R. O. Halloran. There were 25 other members present.

MRS. CLAUDE SMITH, *Secretary.*

Logan County

The Woman's Auxiliary to the Logan County Society met on November 5, at the home of Mrs.

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E. H. Starcher at Stirrat. Mrs. V. A. Deason, president, presided and ten members were present. Mrs. H. V. Thomas of Clarksburg, state Auxiliary president, was the guest speaker. Mrs. John P. Helmick, came from Fairmont to speak on the public relation plans of the Auxiliary. The next meeting of the Logan County Auxiliary will be held on December 10.

MRS. W. P. HAMILTON, *Secretary*.

McDowell County

The Woman's Auxiliary to the McDowell County Society held their October meeting at the Appalachian Club Room, Welch. Mrs. C. B. Chapman presided and 17 members and one guest attended. Mrs. J. H. Anderson gave a report from the state convention at White Sulphur Springs.

A charity project for the year was considered, and a crippled children's fund decided upon. New printed programs for the current year were approved.

On November 6, the Auxiliary held a meeting at Miss Lewis' Tea Room, at Welch. There were 16 members and five guests present. Mrs. H. V. Thomas of Clarksburg, state Auxiliary president, was the guest of honor and spoke on "Functions of National and State Organizations." Mrs. John Helmick of Fairmont, public relations chairman, spoke on "Work of Public Relations Committee, as Related to the State Medical Association." Mrs. P. A. Earley, executive chairman of the crippled children's society addressed the group concerning the work of her organization.

The next meeting will be held at the Appalachian Club Room, Welch, on December 11.

MRS. E. O. GATES, *Secretary*.

Parkersburg Academy

The Auxiliary to the Academy of Medicine of Parkersburg met on November 13, at the Chancellor Hotel, Parkersburg. Mrs. H. A. Giltner, president, called the meeting to order, and there were 28 members present. Mrs. A. Morgan Dearman read a summary of what the Auxiliary had done last year with their *Hygeia* magazine project, and also outlined the origin of the *Auxiliary Bulletin*. Mrs. Welch England was asked to read from the *Bulletin* the "Ten Commandments for Doctors'

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Wives" and the inaugural speech of Mrs. V. E. Holcombe.

The December meeting will be held at the Chancellor on the tenth.

MRS. CHARLES L. GOODHAND, *Secretary*.

Raleigh County

On October 21, 1940, the Woman's Auxiliary to the Raleigh County Medical Society, met at the Beckley Hotel for their regular meeting. Mrs. E. Newton DuPuy, president, presided over the meeting and there were 19 members present. The president gave a report of the joint meeting of the Virginia and West Virginia Auxiliaries, held in White Sulphur Springs, July 29 to 31.

Mrs. Scott A. Ford of Edwight, spoke on the life of Jane Todd Crawford. The Auxiliary adopted as a project for the year the assisting at the County Prenatal Clinic, which meets twice a month. They will take case histories and aid in transportation of patients. A committee was selected to aid in the annual Red Cross roll call.

The Auxiliary met on November 18, at the Beckley Hotel for a luncheon. Twenty-four members were present. Mrs. H. V. Thomas of Clarksburg, state president of the Auxiliary, spoke on "Organization of Local, State and National Medical Auxiliaries." Mrs. S. S. Hall, state convention chairman, spoke on "The State Convention in Charleston Next May."

Plans were made to present subscriptions to *Hygeia* magazine to Pinecrest Sanitarium, and also to the Public Library, if none are there. The December meeting will be held on the sixteenth at the Beckley Hotel. It will also be a luncheon and Mrs. V. E. Holcombe of Charleston, national Auxiliary president, will be guest speaker.

MRS. HUBERT A. SHAFFER, *Secretary*.

Ill health is rarely caused by tuberculosis until the disease is moderately advanced. Symptoms may be absent in the presence of extensive disease.—H. W. Hetherington, M. D. and H. L. Israel, M. D., *Amer. Jour. Hyg.*, January, 1940.

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Neighbor Journals

Eternal Vigilance Needed

Doctors are confronted with a possibility of enactment of the Wagner Political Medicine bill which eventually will probably add $850,000,000 to federal tax burdens while subjecting physicians and medical standards to political control.

A great man said, "God gave liberty to men only on condition of eternal vigilance,"—vigilance in "emergencies" as well as peace time. Scientific medical progress is at hazard today. Medical practice is in danger of being regimented, and regimentation will be fatal to scientific medical service to the people as it has been in Germany and England.

We need a united front; this is the time to close ranks. Doctors, dentists and druggists should get together and oppose to the ninth degree bureaucratic centralized government control that is sure to make a political football of medical service.

Unless all the professions become alert and vigilant we shall be led before we realize it still farther down the road toward a totalitarian government.

Bureaucratic trend in government served to make still clearer the fact that the issue before the American people with respect to medical care is this: Shall patients and doctors retain their freedom of judgment in the matter of medical care,

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or shall this freedom be surrendered to some governmental agency?—*Illinois Medical Journal.*

Tuberculosis and the Draft

Tuberculosis, during and after the World War, has cost approximately $960,000,000 to date in compensation, vocational training, insurance and hospitalization. The moist râle, which was the criterion of fitness for the World War, is shown by experience, much of which has accumulated since that time, to be much less reliable than radiography in situations analogous to the examination of recruits. A huge amount of compensation has been paid out to men manifestly tuberculous at the time they were sent to camp who should have been rejected by the local draft boards, but were not.

A normal chest röentgenogram should be the criterion of acceptance in a future mobilization, including the draft for training, and it should be made and reported before the recruit has spent a night away from his own roof to obviate a repetition of the claims for aggravation of pre-existing tuberculosis which occurred during and after the World War.—Ramsay Spillman, M. D., *Jour. Amer. Med. Assn.*, October 19, 1940.

Medical College of Virginia

Dedication of the new six hundred bed hospital at the Medical College of Virginia, Richmond, will take place on Founders' Day of the institution, Thursday, December 5, at 12 o'clock noon. Among those participating will be Governor James H. Price, Dr. Walter L. Bierring, past president, American Medical Association; Dr. Walter B. Martin, president of the Medical Society of Virginia; Dr. H. E. Jordan, dean, department of medicine, University of Virginia, and Dr. Lewis E. Jarrett, director of the hospital division, Medical College of Virginia. A notable group of visitors is expected.

Beginning at two o'clock in the afternoon the new hospital will be open for inspection to the general public, and on Tuesday night, December 3, a reception and hospital open house will be observed at the new hospital for the local medical profession and specially invited guests.

The new hospital completed at a cost of approximately $2,500,000, with equipment, provides for two new services here, neuropsychiatry and contagious diseases, enlarged facilities for physical therapy and many other activities, including ample provision for teaching.

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Dr. Walter L. Bierring, president, and Dr. J. J. Moore, secretary, of the Alpha Omega Alpha honorary medical fraternity, will participate in the installation of a chapter of this fraternity at the Medical College of Virginia on Wednesday, December 4.

Far-Sightedness

Far-sighted persons cannot see distant objects more clearly than persons with normal eyesight, *Hygeia, The Health Magazine* points out in answer to an inquiry.

"The so-called far-sighted eye is smaller than the normal eye, and therefore parallel rays of light focus behind the sensitive screen (retina). For the far-sighted persons to see far objects clearly it is necessary for the lens muscle to help in bringing the focus on the retina; the normal eye sees the distant object without any muscular effort. With this muscular action the far-sighted person may see objects at a distance just as clearly, but certainly no more clearly, than one whose eyesight is normal."

Chest Business in West Virginia

West Virginia is to be honored in the December issue (Vol. VI, No. 12) of *Diseases of the Chest*, national periodical devoted to tuberculosis and other chest conditions, with a special section devoted to this state. Those who have participated in the compilation and preparation of this West Virginia section are Drs. Walter E. Vest, Huntington; Anthony V. Cadden, Hopemont; E. E. Clovis, Wheeling; William L. Cook, Charleston; George F. Evans, Clarksburg; E. T. Goff, Parkersburg; George E. Gwinn, Beckley; George R. Maxwell, Morgantown, and David Salkin, Hopemont.

The prospectus of the December issue of *Diseases of the Chest* outlined a scientific article on "Diagnosis of Intestinal Tuberculosis" by Dr. David Salkin and Dr. A. V. Cadden; "History of the West Virginia Tuberculosis and Health Association" by Dr. George F. Evans, past president, and photographs and biographical notes on Dr. J. G. Pettit (1880-1929) and Mr. George C. Rowell (1874-1940).

There will also be photographs and histories of

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the sanatoria at Hopemont, Pinecrest at Beckley, Denmar, Hillcrest at Charleston, Grand View at Moundsville, Eastmont at Morgantown, the Ohio County Sanatorium at Triadelphia and the West Virginia Preventorium at Parkersburg.

Supplies For Britain

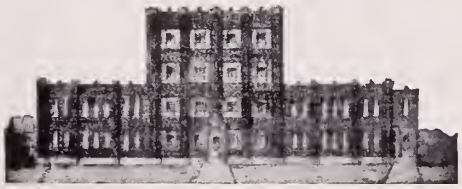
Dr. W. M. Sheppe of Wheeling Clinic, Wheeling, has been designated as the West Virginia representative of the Medical and Surgical Supply Committee of America, an organization that originated in New York in August to collect used instruments and pharmaceutical supplies to aid Great Britain. The movement met with such spontaneous success in New York City that it was expanded and put on a national basis in October.

The Medical and Surgical Supply Committee has its working group composed exclusively of physicians and surgeons who have volunteered their services, which accounts to a large extent for the excellent response of medical and pharmaceutical houses and members of the medical profession, who have contributed generously in response to solicitation of the doctors on the committee. Rigid standards of inspection have been set up and all supplies and equipment received are inspected by experts before being packed for shipment. Medical and pharmaceutical supplies whose value has not been established are not accepted, nor are any contributions of supplies which may have deteriorated because of age. All surgical equipment, on the other hand, is made use of in one form or another and all instruments used by physicians and surgeons are welcome contributions.

According to Dr. Sheppe, the Medical and Surgical Supply Committee is not appealing for financial assistance. He said that most physicians have quantities of supplies sent them by various manufacturing and pharmaceutical houses. These medications plus any instruments or equipment which a doctor may feel able to donate will be the means of saving human life.

Any West Virginia doctor who cares to contribute medications or equipment should forward the same directly to Dr. Sheppe at the Wheeling Clinic and he will take care of the transportation from that point on.

The Myers Clinic Hospital



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Through the Board of Foreign Missions of the Methodist Episcopal Church, an interesting communication has been received from Dr. S. H. Liljestrand, M. D., (Syracuse, 1915) missionary in Chengtu, West China, along the Burma Road. The Women's Hospital, connected with West China Union University, Chengtu, was completely destroyed in a fire which followed a Japanese air-raid in August. Dr. Liljestrand writes:

"The fire which destroyed the Women's Hospital destroyed all of my cystoscopic and electrotherapeutic apparatus and the accessories of a general gynecological clinic. Fortunately I had loaned a cystoscope to the Men's Hospital a block away. Also, the radium was saved, being in a patient that night. The patient was ambulatory. She went to a Chinese hotel because of the fire. In the morning, her honorable husband informed us of her whereabouts and the radium was recovered. I still have only fifty milligrams—but that is a mighty help.

"I lost a diathermy machine; an ultra-violet lamp, large size; three adult-size cystoscopes; one infant's and one children's cystoscope galvanic electrical apparatus.

"The fire also destroyed our medical periodicals. * * * I would be very glad if we could get second-hand apparatus, and used copies of medical magazines. * * * There continues to be a great demand for our services in this war-torn section of China."

Readers interested in assisting Dr. Liljestrand should communicate with the Medical Department, Board of Foreign Missions, Methodist Church, 150 Fifth Avenue, New York City.

News Notes

The registered attendance at the annual meeting of the American Public Health Association in Detroit the week of October 7 was 3,187, the second largest in the Association's history. New officers elected were W. S. Leathers, M. D., Nashville, president; John L. Rice, M. D., New York City, president-elect; Abel Wolman, Dr. Eng., Baltimore, chairman of the executive board, and Reginald M. Atwater, M. D., New York City, executive secretary. The seventieth annual meeting will be held in Atlantic City in October, 1941.

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McMillan Hospital Training School; Margaret Bloom, R. N., Superintendent of Nurses; Martha Jane Jordan, R. N., Asst. Supt. of Nurses
Evangeline B. Jones, R.N., Instructress
Rachael Moore, R.N., Supervisor
Julia Welch, R.N., Supervisor.
Martha Maynor, R. N., Surgical Supervisor

The Department of Obstetrics and Gynecology of the University of Chicago and the Chicago Lying-In Hospital offers five postgraduate courses of four weeks each between January 6 and June 21. The beginning dates are January 6, February 10, March 17, April 21 and May 26. All members of the department and all services and units of the institution participate in the instruction. A deposit of $25 is required, of which $10 is returned on completion of the course. Inquiries should be addressed to: Postgraduate Course, 5848 Drexel Avenue, Chicago, Illinois.

The written examination and review of case histories (Part I) for Group B candidates for the American Board of Obstetrics and Gynecology will be held in the various cities of the United States and Canada on Saturday, January 4, 1941. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination to be held in June, 1941. For further information and application blanks, write Dr. Paul Titus, 1015 Highland Building, Pittsburgh.

The American Academy of Dermatology and Syphilology is holding its third annual meeting at the Palmer House, Chicago, on December 8-11, 1941. Sessions will be in the form of symposia, special lectures, roundtable discussions and clinical presentations at the University of Illinois Medical School in Chicago. Guest speakers include Dr. Cyrus C. Sturgis, Professor of Medicine at the University of Michigan; Dr. William F. Petersen, Professor of Pathology, University of Illinois, and Dr. Elmer L. Sevringhaus, Professor of Medicine, University of Wisconsin.

Dr. Ralph Irving Lloyd, Brooklyn, was named president-elect of the American Academy of Ophthalmology and Otolaryngology at the annual meeting in Cleveland, October 6-10. Dr. Frank R. Spencer, Boulder, Colorado, will be president during the coming year. Dr. William P. Wherry, Omaha, Nebraska, was re-elected executive-secretary. Tentative plans were made for a meeting of the Pan-American Congress of Ophthalmology in Montevideo, Uraguay, in 1943. The place for the 1941 meeting of the Academy will be announced later.

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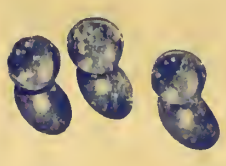

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THE WEST VIRGINIA MEDICAL JOURNAL

Published by The West Virginia State Medical Association

Vol. 36 DECEMBER, 1940 No. 12

Christmas Greetings

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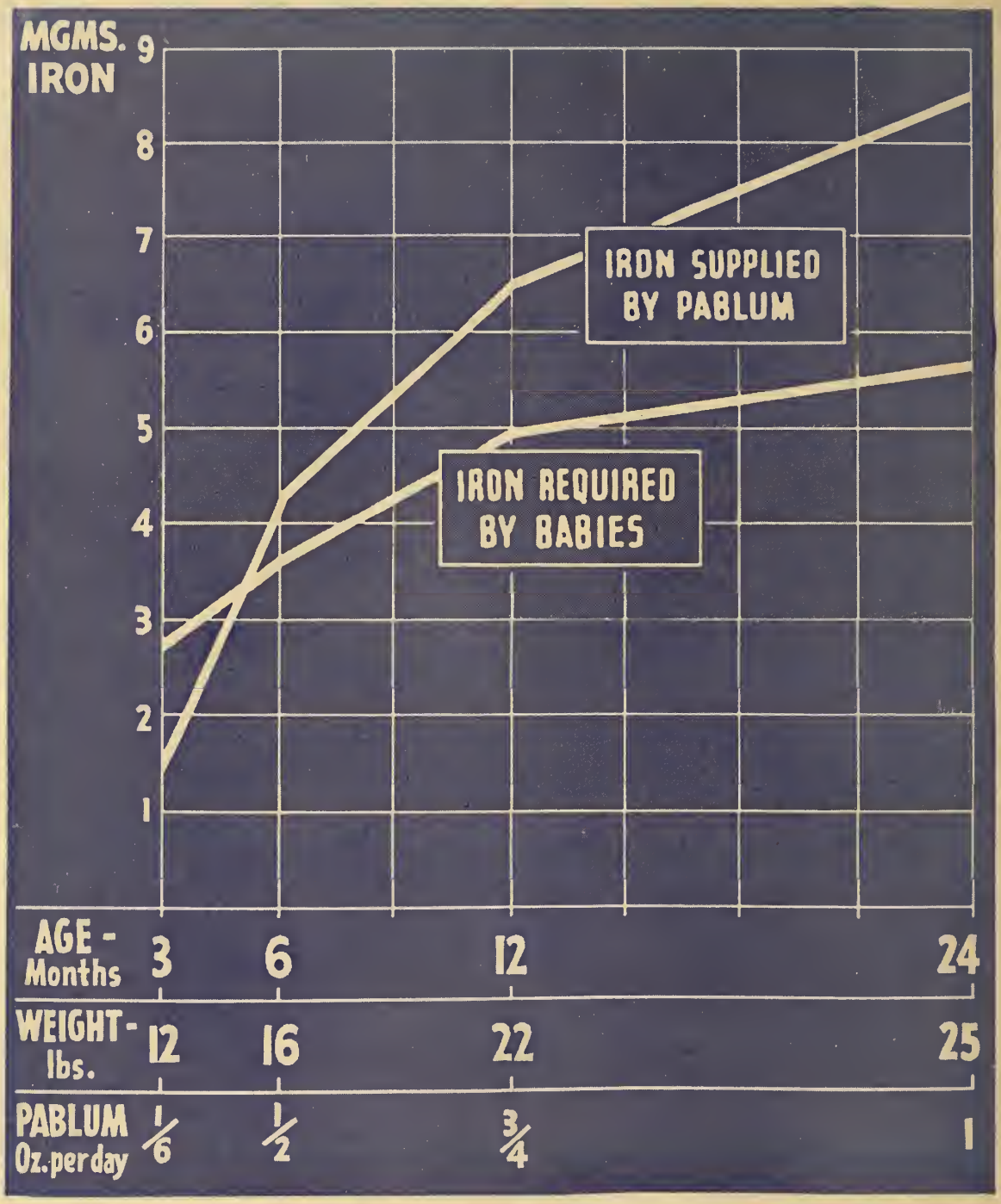

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